

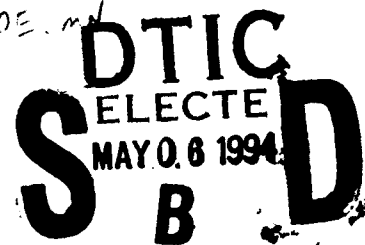
AD-A278 931



CULTURAL RESOURCES SERIES
Report Number: CELMN/PD - 94/05

US Army Corps
of Engineers

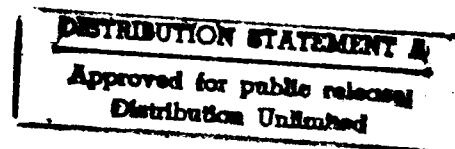
New Orleans District



CULTURAL RESOURCES SURVEY OF GREENWOOD BEND AND IOWA POINT REVETMENT, MISSISSIPPI RIVER M-293.1 TO 280-L

FINAL REPORT

OCTOBER 1993



LOUISIANA STATE UNIVERSITY
LOUISIANA GEOLOGICAL SURVEY
Baton Rouge, Louisiana 70893-6002

94-13578



Prepared for

U.S. ARMY CORPS OF ENGINEERS
New Orleans District
P.O. Box 60267
New Orleans, Louisiana 70160-0267

DTIC QUALITY INSPECTED 1

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94 5 05 056

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION Unclassified			1b. RESTRICTIVE MARKINGS		
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION / AVAILABILITY OF REPORT Unlimited		
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE					
4. PERFORMING ORGANIZATION REPORT NUMBER(S)			5. MONITORING ORGANIZATION REPORT NUMBER(S) COELMCI/PO 94/55		
6a. NAME OF PERFORMING ORGANIZATION Louisiana State University La. Geological Survey		6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION U.S. Army Corps of Engineers New Orleans District		
6c. ADDRESS (City, State, and ZIP Code) P.O. Box 16002 Baton Rouge, La. 70893-6002			7b. ADDRESS (City, State, and ZIP Code) P.O. Box 60267 New Orleans, La. 70160-0267		
8a. NAME OF FUNDING / SPONSORING ORGANIZATION		8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER DACW29-90-D-0016, Delivery Order #2		
8c. ADDRESS (City, State, and ZIP Code)			10. SOURCE OF FUNDING NUMBERS		
			PROGRAM ELEMENT NO.	PROJECT NO.	TASK NO.
			WORK UNIT ACCESSION NO.		
11. TITLE (Include Security Classification) Cultural Resources Survey of Greenwood Bend and Iowa Point Revetments, Mississippi River M-293.1 To 280-L					
12. PERSONAL AUTHOR(S) Dennis Jones, Joann Mossa, Melissa Wiedenfeld, Anthony Lewis, Carl Kuttruff					
13a. TYPE OF REPORT Final Report		13b. TIME COVERED FROM 7/14/91 TO 3/23/92		14. DATE OF REPORT (Year, Month, Day) October 1993	
				15. PAGE COUNT 145	
16. SUPPLEMENTARY NOTATION					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP			
05	06		Tunica Island, Tunica Hills, bank erosion, Iowa Point, Tunica Indians, Como Landing, Como Plantation, Como Landing Site, Brandon		
19. ABSTRACT (Continue on reverse if necessary and identify by block number) This report evaluates the cultural resources on the east (left) bank of the Mississippi River between Miles 293.1 to 280-L. This portion of the river contains the existing Greenwood Bend and Iowa Point Revetments that are scheduled to be expanded. Any cultural resources within this portion would be impacted by the construction. The extant cultural resources within the area scheduled for revetment construction were considered from the standpoint of eligibility for the National Register of Historic Places. The research consisted of archival and field work that included geomorphological, historical, and archeological investigations. Chapter II discusses the environmental setting of the project area. This discussion appraises the geomorphology, the flora and fauna, and the land use patterns as revealed by historic and recent aerial photographs. Chapter III considers the prehistoric culture history of the region around the project area and the better documented ethnohistory of the region. Chapter IV relates the general history of West Feliciana Parish as well as the (cont.					
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT <input type="checkbox"/> UNCLASSIFIED/UNLIMITED <input checked="" type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION Unclassified		
22a. NAME OF RESPONSIBLE INDIVIDUAL Carroll Kleinhans			22b. TELEPHONE (Include Area Code) (504) 862-2548		22c. OFFICE SYMBOL

19.

specific history of the holdings within the project area.

Chapter V briefly describes the previous archeological research in the vicinity of the project reach. Chapter VI succinctly reports the research design and methodology employed in the project area. Chapter VII details the results of the cultural resources survey and Chapter VIII presents the conclusions and recommendations.

One previously unreported prehistoric site was encountered during the project, The Como Landing Site (16WF-29). The site was disturbed by bank erosion and the construction of a movie set in 1983. Only a small area of undisturbed archeological deposits remained. This site was tested and found to date from the late Coles Creek to Plaquemine period, roughly A.D. 1000 to A.D. 1500. The site was not deemed eligible for the National Register due to the lack of site integrity resulting from the disturbance. Other historic and prehistoric artifacts were recovered in the vicinity of the project area, but they were not part of a site containing any integrity.

**CULTURAL RESOURCES SURVEY OF
GREENWOOD BEND AND IOWA POINT
REVETMENTS, MISSISSIPPI RIVER M-293.1 TO 280-L**

FINAL REPORT

by

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**Prepared for
U.S. Army Corps of Engineers
New Orleans District**

**Contract No. DACW29-90-D-0016
Delivery Order #2**

**Louisiana Geological Survey
Louisiana State University
Baton Rouge, Louisiana**

October 1993

Accession For	
NTIS GRA&I	<input checked="checked" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/Availability	
Availability Codes	
Dist.	Avail and/or Special
A-1	

ACKNOWLEDGEMENTS

As with most projects of this nature, this is not the product of one person's efforts. A great many people contributed to the final product, from field work to final editing.

This project was managed by Carroll Kleinhans, formerly of the New Orleans District.

Rocky Sexton, Fred Sunderman, Ronnie Johnson, Malcolm Shuman and Dennis Jones all helped in the field work. Malcolm, Sharon Newman and Gretchen Ritter, of the Administration Division of the Louisiana Geological Survey, aided in the administration of this project.

Concerning sites in and around the project area, Duke Rivet of the Louisiana Division of Archaeology was most helpful. Carl Kuttruff aided in the identification of historical artifacts. Mary Lee Eggart did her usual good job of artifact illustration. Lori Buck cheerfully washed and catalogued all artifacts.

Sharon Newman did her usual good job of helping to prepare the report.

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CHAPTER I INTRODUCTION

This report presents a description of the results of archeological, historical, and geomorphological research for a portion of the east (right descending) bank of the Mississippi River between Miles 293.1 and 280-L. Sections of this segment of the river totalling 4.1 mi are scheduled for revetment construction. This project is part of a larger study by the U.S. Army Corps of Engineers on the impacts to cultural resources on the Mississippi River due to revetment construction. The project area is just below the community of Tunica and wholly within West Feliciana Parish, Louisiana (Figure 1).

The research was done for the U.S. Army Corps of Engineers, New Orleans District as part of a general services contract for conducting cultural resources surveys within the district. Personnel from the Louisiana Geological Survey and its consultants are responsible for all portions of this report.

The banks of two portions of the project area have already been reveted and are designated as the Greenwood Bend and Iowa Point revetments. These revetments are eventually to be extended. Four segments of the river bank were surveyed by pedestrian reconnaissance and shovel testing, while the entire project area was the object of archival and geomorphological study. The total area surveyed was approximately 100 ac with the field work done in July, August and September of 1991.

The report will be presented in the following manner: Chapter II discusses the environmental setting of the project area with consideration given to the geomorphology, the flora and fauna, as well as a review of land use patterns as presented by aerial photography.

Chapter III describes the general prehistoric and ethnohistoric record of the vicinity of the project area. Chapter IV details the history of the project area, with special consideration given to land ownership. Chapter V presents an account of the relatively extensive archeological research that has been conducted in and around the project area. Chapter VI is a statement of the research design and methodology employed during the research. The results of the cultural resources survey of the four segments within the project area are presented in Chapter VII. Chapter VIII is a summary of the survey investigations within the project area and contains the appropriate recommendations concerning the cultural resources encountered. These recommendations are made with in the context of the research questions presented in Chapter VI and take into account the criteria for reporting sites to the Louisiana Division of Archaeology and nominating sites to the National Register of Historic Places.

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CHAPTER II

ENVIRONMENTAL SETTING

A description of the environmental setting of the project area will be presented in the following manner: 1) a consideration of the current flora and fauna in the vicinity, 2) the geomorphology of the pertinent segment of the Mississippi River, and 3) an interpretation of aerial photographs taken over a period of years since the early 1940s.

FLORA AND FAUNA

The dissected uplands in the Tunica Hills of West Feliciana Parish contain mixed shortleaf pine/oak-hickory forests. Examples of the common tree types are: the shortleaf pine (*Pinus echinata*), the loblolly pine (*Pinus taeda*), red oak (*Quercus falcata*), black oak (*Quercus velutina*), black hickory (*Carva texana*), sweet gum (*Liquidambar styraciflua*) and red maple (*Acer rubrum*). The understory in this type of forest contains a great many shrubs such as huckleberry (*Vaccinium arboreum*), holly (*Ilex decidua*), and poison ivy (*Rhus toxicodendron*). On the banks of the Mississippi River, willows (*Salix nigra*) and sycamores (*Platanus occidentalis*) dominate the natural vegetation. The modern disturbance of the forests in Louisiana, however, has allowed the short leaf varieties to perpetuate beyond their natural exclusion from the hardwood forest. This description of the natural setting, typical for West Feliciana Parish, is also specifically appropriate for the project area.

The animal life of this region was undoubtedly diverse and abundant before extensive historic settlement. With farming and logging, however, the natural setting of the project area was significantly altered. Nevertheless, Table 1 presents a lists of representative fauna that are known to inhabit the region surrounding the project area and which probably inhabited it before the onset of modern development.

TABLE I
REPRESENTATIVE ANIMAL SPECIES
PRESENT AT PROJECT AREA

FISH

COMMON NAME	SCIENTIFIC NAME	HABITAT
spotted gar	<i>Lepisosteus oculatus</i>	clearer waters of lakes, bayous, and oxbows with abundant vegetation
longnose gar	<i>Lepisosteus osseus</i>	larger rivers
shortnose gar	<i>Lepisosteus platostomus</i>	larger rivers
alligator gar	<i>Lepisosteus spatula</i>	large bodies of water, rivers, and lakes
bowfin	<i>Amia calva</i>	sluggish waters of bayous and borrow pits often choked with vegetation
gizzard shad	<i>Dorosoma cepedianum</i>	common in all waters of this area
cypress minnow	<i>Hybognathus hayi</i>	quiet water areas of rivers over soft bottom
silvery minnow	<i>Hybognathus nuchalis</i>	main stream of major rivers over mud, sand or gravel bottom
golden shiner	<i>Notemigonus crysoleucas</i>	common in all waters of this area
emerald shiner	<i>Notropis artherinoides</i>	large rivers
river shiner	<i>Notropis blennioides</i>	large rivers
smallmouth buffalo	<i>Ictiobus bubalus</i>	oxbow lakes and backwaters of large rivers
bigmouth buffalo	<i>Ictiobus cyprinellus</i>	rivers, lakes, oxbows, and bayous
black buffalo	<i>Ictiobus niger</i>	larger rivers, oxbows, and bayous
blue catfish	<i>Ictalurus furcatus</i>	larger rivers
channel catfish	<i>Ictalurus punctatus</i>	most lakes and rivers
yellow bass	<i>Morone mississippiensis</i>	moderate to small lakes
blue gill	<i>Lepomis macrochirus</i>	non-flowing, clear water with scattered weed beds
largemouth bass	<i>Micropterus salmoides</i>	non-flowing water with aquatic vegetation
freshwater drum	<i>Aplodinotus grunniens</i>	silty waters of large rivers and lakes

TABLE I (Continued)

AMPHIBIANS

COMMON NAME	SCIENTIFIC NAME	HABITAT
American toad	<i>Bufo americanus</i>	variety of habitats; require water, cover and insects
green treefrog	<i>Hyla cinerea</i>	swamps, lake borders, anyplace with much water
gray treefrog	<i>Hyla versicolor</i> and <i>Hyla chrysoscelis</i>	low shrubs in or near standing water
bullfrog	<i>Rana catesbiana</i>	large bodies of water (lakes, ponds, sluggish streams)
green frog	<i>Rana clamitans melanota</i>	shallow, fresh water

REPTILES

COMMON NAME	SCIENTIFIC NAME	HABITAT
snapping turtle	<i>Chelydra serpentina</i>	permanent body of fresh water
alligator snapping turtle	<i>Macrolemys temmincki</i>	rivers and lakes
three-toed box turtle	<i>Terrapene carolina triunguis</i>	terrestrial, wooded areas or edges
ground skink	<i>Leiopisma laterale</i>	forest floor covered with leaves
five-lines skink	<i>Eumeces fasciatus</i>	in or near wooded areas with scattered debris
diamondback water snake	<i>Natrix rhombifera rhombifer</i>	most aquatic habitats
yellow-bellied water snake	<i>Natrix erythrogaster flavigaster</i>	large, permanent waterbodies
eastern garter snake	<i>Thamnophis sirtalis sirtalis</i>	virtually all semi-aquatic to terrestrial habitats
speckled king snake	<i>Lampropeltis getulus holbrooki</i>	variety of habitats including swamps
southern copperhead	<i>Agkistrodon contortrix contortrix</i>	lowlands near swamps
cottonmouth	<i>Agkistrodon piscivorus</i>	aquatic habitat-swamps, lakes and rivers

TABLE I (Continued)

BIRDS

COMMON NAME	SCIENTIFIC NAME	HABITAT
great blue heron	<i>Ardea herodias</i>	shallow swamps and bayous
marsh hawk	<i>Circus cyaneus</i>	mature bottomland-pine hardwood forest
black duck	<i>Anas rubripes</i>	aquatic habitats
pintail	<i>Anas Acuta</i>	aquatic habitats
green-winged teal	<i>Anas carolinensis</i>	aquatic habitats
blue-winged teal	<i>Anas discors</i>	aquatic habitats
canvasback	<i>Anas vausineria</i>	aquatic habitats
gadwall	<i>Anas strepera</i>	aquatic habitats
great egret	<i>Casmerodius albus</i>	wooded swamps
snowy egret	<i>Egretta thula</i>	wooded swamps
mallard	<i>Anas platyrhynchos</i>	shallow wooded swamps or flooded bottomlands
wood duck	<i>Aix sponsa</i>	wooded swamps and flooded bottomlands
wild turkey	<i>Meleagris gallopavo</i>	mature bottomlands or pine hardwood forest
red-cockaded woodpecker	<i>Picoides borealis</i>	open pine woodlands
pileated woodpecker	<i>Dryocopus pileatus</i>	conifer, mixed, and hardwood forests
red-headed woodpecker	<i>Melanerpes erythrocephalus</i>	groves, farm country

TABLE I (Continued)

MAMMALS

COMMON NAME	SCIENTIFIC NAME	HABITAT
Virginia opossum	<i>Didelphis virginiana</i>	wooded areas
eastern cottontail	<i>Sylvilagus floridanus</i>	open grassy areas and pastures
swamp rabbit	<i>Sylvilagus aquaticus</i>	heavily wooded areas
gray squirrel	<i>Sciurus carolinensis</i>	wooded area
fox squirrel	<i>Sciurus niger</i>	open, wooded area
American beaver	<i>Castor canadensis</i>	aquatic area with wood vegetation
coyote	<i>Canis latrans</i>	prairies, open woodlands
red fox	<i>Vulpes fulva</i>	open or broken mixed forest
gray fox	<i>Urocyon cinereoargenteus</i>	upland mixed forest-pasture areas
striped skunk	<i>Mephitis mephitis</i>	mixed open and wooded areas
neartic river otter	<i>Lutra canadensis</i>	most aquatic habitats
white-tailed deer	<i>Odocoileus virginianus</i>	bottomland hardwood forest with openings

NOTES: References cited are Douglas (1974), Conant (1975), Lowrey (1955 & 1974), St. Amant (1959) and Sealander (1956).

GEOMORPHOLOGY OF THE PROJECT AREA

An understanding of a region's geomorphology, geomorphic changes, and geomorphic processes is an important component for assessing the distribution and preservation potential of human settlements, areas of other human activities and associated cultural resources. Geomorphology can be used to determine the ages of fluvial deposits and reconstruct the environments where people may have been occupying. Knowledge of geomorphic changes may indicate the following: 1) where sites are likely to be destroyed because of vertical and lateral erosion or recent human activities; 2) where sites may be preserved in the subsurface through burial by sediment deposition; 3) where sites may be more distant from their former position near a water boundary because of lateral accretion; and, 4) where sites may be preserved at or near the surface because of minimal geomorphic changes.

Where geomorphic changes are rapid, characterization of the historical changes and the process environment is more critical than in areas where changes are slow and the landscape is not subject to extreme or frequent geomorphic events. The lower Mississippi River is a geomorphologically dynamic area where documentation of historical changes and active processes is essential to understanding human occupation along the river's banks. The meander belts of the Mississippi have experienced numerous historical changes and shifts. Within the meander belts, many geomorphic changes include migration of meander bends, the occurrence of crevasses and associated splays, and the development of natural and artificial cutoffs. Furthermore, recent changes have resulted because of rapid sedimentation and have been brought on by modern developments such as the construction of flood and bank protection measures along much of the river.

Many settings and areas in the Lower Mississippi Valley have been subject to frequent flooding which resulted in the erosion or burial of sites and other cultural resources. An overview of the frequency of flooding and relationships of discharge with elevation can be linked with the elevation of known and potential sites and to assess temporal and spatial influences of fluvial processes.

This component of the cultural resources assessment report concerns these geomorphic aspects of a segment of the lower Mississippi River in the vicinity of Greenwood Bend and Iowa Point revetments, Louisiana, which is located between miles 293.1 to 280.0-L AHP (above the Head of Passes) in West Feliciana Parish, Louisiana. This area is part of an ongoing program of bank protection of the lower Mississippi River by the U.S. Army Corps of Engineers. In general, this program is designed to prevent or reduce the recession of caving banks to the artificial levees which were elevated soon after the flood of 1927 to prevent flooding and to maintain the shorter channel created for navigation through a number of human-induced cutoffs in the 1930's. The geomorphology of this study area is described and characterized in three major sections: 1) the background geomorphology and geology is discussed, 2) historical geomorphic changes in the proposed project site and 3) modern and historical geomorphic processes.

Setting and Background Geomorphology

The lower Mississippi River basin in the vicinity of the proposed project area is bounded to the west by the modern alluvial floodplain backed by artificial levees which are located from a few hundred feet to several miles away from the present channel. The east or left bank, where the revetment will be placed, is not currently protected by artificial levees. In many places the bank is backed by Pleistocene bluffs locally known as the Tunica Hills. In other parts of the project area, it is fronted by modern floodplain deposits of the Mississippi River. The eastern bluff line of the Tunica Hills varies in elevation from about 75 to 200 ft above the floodplain. On the east, or left-descending bank where the proposed project site is located, the bluff line is located at the river's edge on the upstream end (mile 293) and is generally further from the river at downstream end of the project site (mile 280).

Geologic-physiographic units in the proposed project area include: 1) High Terraces complex, which is early Pleistocene or Pliocene in age; 2) loesses which cap the High Terraces complex; 3) late Quaternary terraces that flank local streams; 4) alluvium of local stream valleys; and 5) alluvium of the Mississippi River. Since deposition, all these deposits have also been influenced by reworking associated with colluvial processes.

Streams that drain the Tunica Hills flow from these uplands into swamps adjoining the Mississippi River or into the river itself. Thus their ultimate base level may vary with the stage and position of the Mississippi River. Streams in or near the project area are Tunica Bayou, Pollocks Bayou, and Como Bayou, as well as unnamed streams. The headwaters of these streams are at elevations approaching 150 m (500 ft). Elevations in the vicinity of the project area exceed 122 m (400 ft), and are less than 6 m (20 ft) in local backswamps or river.

High Terraces Complex - The High Terraces complex is a name given by the Louisiana Geological Survey (Snead and McCulloh 1984) for the oldest unit found at the surface in the study area. Commonly called the Tunica Hills, it corresponds closely with the area originally delineated as the Citronelle Formation by Matson (1916), a name used throughout other geological studies of the Gulf Coastal Plain and Lower Mississippi Valley. The description on the Geologic Map of Louisiana is "a tan to orange clay, silt, and sand with a large amount of basal gravel. Surfaces are highly dissected and less continuous than the lower terraces, and are composed of terraces formerly designated as Citronelle, Williana, and the Bentley" (Snead and McCulloh 1984). Most workers have considered these as one morphostratigraphic unit, although Fisk (1944) believed that portions of two terraces, the Williana and the Bentley, occur across this area. Nomenclature associated with this unit has been varied (Table 2).

At maturity, the High Terraces complex is dissected and its general morphology is that of a cuesta. Surface elevations are generally higher than 50 m (170 ft), but the contact between this terrace and other units cannot be drawn solely on the basis of elevation. Local

TABLE 2
STRATIGRAPHIC NOMENCLATURE, INTERPRETATION, AND APPROXIMATE STRATIGRAPHIC CORRELATION
OF THE COAST-TRENDING PLEISTOCENE TO LATE TERTIARY DEPOSITS OF THE CENTRAL GULF COASTAL PLAIN

Source & Locality	Nomenclature for Prairie Terraces	Nomenclature for Intermediate Terraces	Nomenclature for High Terraces	Nomenclature for Late Tertiary Deposits
Hilgard (1866, 1869) Mississippi western Florida parishes Louisiana	Port Hudson Formation fluvial, brackish, marine (Qpl)		Orange Sand Formation glaciofluvial (Qopl)	Grand Gulf Group (T)
McGee (1891) Atlantic & Gulf coastal plains	Columbia Formation marine, continental (Q)		Lafayette Formation marine (T)	
Claudenin (1896) Florida Parishes	Columbia Formation basal portion - continental (Q) upper portion - deltaic, submarine		Lafayette Formation continental (LT Q)	
Harris & Veach (1899) Louisiana, Mississippi	Port Hudson Formation		Lafayette Formation littoral or coastal (Tpl)	
Mason (1916) Louisiana, Mississippi Alabama, Florida	Pensacola, Hammond, & Port Hickey Ter. coastal & fluvial (Qpl)	St. Elmo Ter. coastal & fluvial (Qpl)	Citronelle Formation largely nonmarine (Tpl)	
Doering (1935) southern Texas & southern Louisiana	Beaumont Formation deltaic, meandering streams (Qpl)	Lissie Formation coalescing river-built fans possibly braided (Qpl)	Willis Formation coalescing river-built fans possibly braided (Qpl)	Flaming Formation (T)
Fisk (1938a) western Florida Parishes Louisiana & southern Mississippi	Port Hickey Terrace deltaic, fluvial equivalents (Qpl)	Second Terrace deltaic, fluvial equivalents (Qpl)	Higher Terraces deltaic, fluvial equivalents (Qopl)	
Fisk (1938b) Red River region, western Louisiana	Prairie Terrace deltaic, fluvial (Qpl)	Montgomery Terrace deltaic, fluvial (Qpl)	Bentley Ter. & Williams Ter. deltaic, fluvial (Qpl)	
Doering (1956) Gulf Coast overview	Eunice Oberlin (Qpl) (Qpl)	Lissie (Qpl)	Citronelle Formation (Qopl)	
Parsons (1967) western Florida Parishes Louisiana & southwestern Mississippi	Beaumont Terrace deltaic plain (Qpl)	Intermediate Terrace deltaic plain (Qpl)	Citronelle Formation braided streams-alluvial plain, marine in subsurface (Qopl Tpl)	Pascagoula Formation (Tm-pl)
Durham, Moore & Parsons (1967) western Florida Parishes	Prairie Terrace	Irene Terrace	Citronelle Formation	Pascagoula Formation (Tm-pl)
Cullinan (1969) Washington & St. Tammany parishes, Louisiana	Prairie Formation (Qpl)		Citronelle Formation	
Campbell (1971) St. Helena & Tangipahoa parishes, Louisiana	Prairie Formation (Qpl)		Citronelle Formation	
Otves (1982) Florida parishes, south mississippi & south Louisiana	Prairie, Gulfport, & Biloxi Formation (Qpl)	Unnamed pre-Sangamon unit (Qpl)	Citronelle Formation (Tpl)	Pascagoula Formation (Tm)
Sneed & McCulloh, comps (1984) Louisiana	Prairie Terraces (Qpl)	Intermediate Terraces (Qpl)	High Terraces (Qpl)	

Ter. - Tertiary Q - Quaternary T - Tertiary LT - Late Tertiary Qpl - Late Pleistocene Qpl - Pleistocene Qopl - Early Pliocene
 Tpl - Pliocene Tm - Miocene

relief is very pronounced and slopes of this surface are generally appreciably greater than that of the lower terraces. Because of dissection and structural influence, the original geomorphic expression of the surface has been obliterated, and depositional environment is best determined stratigraphically.

The depositional environments of these sediments have been variously interpreted as glaciofluvial, marine, meandering, or braided stream (see Table 2). The modern consensus is that the Citronelle Formation is an alluvial apron that was deposited by braided, coalescing streams. Heavy mineral analyses by Rosen (1969) indicate that these deposits are also *not* derived from the Mississippi River as inferred by Fisk (1944). The deposits forming the High Terraces complex consist predominantly of coarse-grained sediments, the source of which has been varying regarded as the continental interior (Fisk 1939; Woodward and Gueno 1941); the eastern Gulf or Appalachian area (Rosen 1969; Cullinan 1969); or, more likely, a combination of these and possibly other sources. In the vicinity of the project area, the origin of these deposits is best attributed to an eastern Gulf or Appalachian provenance (Rosen 1969; Cullinan 1969).

The stratigraphic sequences and patterns observed in exposures in the general region reflect a high-energy fluvial setting with multiple channels, several of which appear to have an appreciably greater competence than modern streams. The sand and gravel deposits commonly display medium- to large-scale planar foreset and trough cross beds, some over 2 m (6 ft) thick. Graveliferous deposits occur in thick sequences where gravel may comprise over 50 percent by weight of individual beds. Rip-up clasts of finely-laminated purplish-red and whitish silt and clay are present in some exposures. Individual rip-up clasts may exceed 125 cm (50 in) in diameter (Smith and Meylan 1983), and clast zones as thick as 3 m (10 ft) have been measured (Mossa and Self 1986). Channeling and cut-and-fill features are common in many exposures. Multi-colored clayey sequences, possibly marginal flood basin or channel fill deposits, 7 m (25 ft) in thickness and are exposed in deposits of the High Terraces complex.

The sediments in these exposures consist of a highly variable bimodal to trimodal mixture of sand, gravel, and clay, with sand being the dominant particle and clay the least common (Self 1983). In the sand-size fraction, quartz is dominant and chert is common. Locally in southeastern Louisiana, the gravel fraction is composed primarily of subrounded, rounded, and subangular chert, with quartz being the next most prevalent component. The clay fraction of some rip-up clasts was determined as primarily kaolinite and illite with small percentages of quartz (Smith and Meylan 1983). Sediments are brightly colored and reflect staining by iron oxide minerals such as hematite and limonite, and possibly oxides of titanium and manganese.

In recent years, at least three major hypotheses have been advanced to explain the occurrence, thickness, and coarseness of these high-level gravel deposits. Clendenin (1896) and Doering (1958) speculated that increased erosion and deposition was related to stream

rejuvenation which had been caused by epeirogenic uplift of the continental interior. Brown (1967), in contrast proposed that a major river, such as an ancestral Tennessee River, flowed southwestward across Mississippi and through the northwest corner of the Florida Parishes. Alt (1974) inferred the Citronelle gravels were deposited by large coalescing alluvial fans which he believed were related to an arid climate. Because none of these ideas has been fully substantiated, there is no consensus as to original deposition. Once in place, however, it is likely that the coarse-grained deposits of basin divides and modern hillcrests are now gravel-defended ridges that are preserved from erosional processes (Brown 1967).

Soils developed on stable landscapes of the High Terraces complex often exhibit very thick sola and a well-developed soil structure. They are further characterized by multiple clay skins, red hues, high percentages of nodules of plinthite or ironstone, and a vermicular fabric of contrasting highly oxidized reduced sediments. The more reduced zones in the vermicular fabric are generally light gray to yellow in color and appear to follow root traces and perhaps burrows. Soils of reworked sediments on less stable landscapes of the High Terraces complex rarely exhibit the contrasting vermicular fabric and generally have less well-developed soil structure. The nature of the soils developed on the High Terraces complex is strongly controlled by the texture of the parent material and relief. The geosol developed on sediments of the High Terraces complex is readily traceable beneath the loess mantles at stable landscape positions.

The age of these deposits has been a subject of contention due to a scarcity of paleontological data and to the occurrence of these gravels overlying Tertiary deposits of varying age. Pleistocene, Pliocene, and Miocene ages have been cited as times of deposition. Many workers accept a Pliocene to Pleistocene deposition for these surficial sediments in Louisiana (see Table 2). However, other investigations suggest that the high-level gravels of the coastal plain may be as old as Miocene (Alt 1974; May 1981).

Reworked sediments are in some places difficult to discern from the original deposits. Landscape position can be an essential key to determining the probability of reworking. This may be important to understanding the prehistoric occupation of the area because, although the deposits are relatively old, cultural materials may be incorporated in the toeslopes which have similar lithologies to those on the hillcrests and hillsides above. Differentiation may generally be accomplished by examining the soil profile in the field, coupled with interpretation of soil survey data.

Loess - Loess, or wind-blown silt, borders both sides of the Mississippi Valley, and rests on the High Terraces complex and even some younger Quaternary terraces. The source of the loess, as shown by mineralogical and spatial evidence, was the Mississippi River and major tributaries which possibly had a braided pattern and largely unvegetated floodplain during Pleistocene glaciations.

Loess stratigraphy has recently been used to assign minimum and relative ages to different surfaces and stratigraphic sequences. The most detailed and extensive work on loesses in the lower Mississippi alluvial valley was conducted by Miller and colleagues (Miller et al. 1985; 1986). Peoria Loess and an older Sicily Island typically blankets the High and Intermediate terrace complexes near the Mississippi valley of south Louisiana (Miller et al. 1985; 1986). In some parts of the Tunica Hills, pre-Peoria loess appears to be missing on the High Terraces complex, but no definitive explanation has been proposed. The Prairie and Deweyville terrace complexes are veneered only by Peoria Loess. The older loess has been dated in Mississippi by thermoluminescence at 95,000 to 75,000 years B.P. (before present) (Johnson et al. 1984) and 85,000 to 76,000 B.P. (Pye 1985). Radiocarbon dates of the Peoria Loess are late Wisconsinan, between 22,000 and 20,000 B.P., in Louisiana (Otvos 1975), and thermoluminescence dates in Mississippi range between 22,000 and 9,000 B.P. (Johnson et al. 1984; Pye 1985). Loess thickness is generally a function of distance from the ancestral Mississippi River, with thicker deposits being the closest (Spicer 1969; Miller et al. 1985).

The Sicily Island Loess extends east at least to the Pearl River, which forms part of the Louisiana-Mississippi boundary, and is generally more extensive than the Peoria Loess in southeastern Louisiana. Eastward about twenty to forty miles to the Amite River, Sicily Island Loess is greater than one meter thick. Further eastward, loess is discontinuous, generally less than one meter thick and mixed with underlying material. A number of field and laboratory criteria have been established to distinguish the loesses (Table 3) (Miller et al. 1985). The Sicily Island loess is more highly weathered and commonly has hues of 7.5YR in contrast to the predominant 10YR hues of the Peoria Loess. The presence of *in situ* loess mantles, which can be assessed by geomorphic, sedimentologic, and pedologic criteria, indicates landscape stability.

Local Late Quaternary Terraces - At least two distinct alluvial terraces flank the modern streams of the Tunica Hills (Delcourt 1974; Delcourt and Delcourt 1977; Kress 1979; Alford et al. 1983). Of these, the higher surface was designated as Prairie Terraces complex and the lower surface was incorporated with Alluvium on the Geologic Map of Louisiana (Snead and McCulloh 1984). For simplicity, others have designated the higher surface as T2 and the lower surface as T1. (Figure 2)

Entrenchment has been a significant geomorphic process along the downstream portions of the streams in the Florida Parishes that drain into the Mississippi River. Bluffs are commonplace along the Tunica Hills streams and generally expose bank sections of greater height and relief than along other southward-flowing streams in the Florida Parishes. Downcutting into the Late Tertiary (Miocene) sediments of the Pascagoula Formation is evident from the bluff exposures and the resistant ledges visible in stream bottoms at low flow.

TABLE 3
COMPARATIVE DIFFERENCES BETWEEN MODERN SOILS, HAVING
SIMILAR LANDSCAPE AND INTERNAL SOIL DRAINAGE CHARACTERISTICS,
DEVELOPED IN PEORIA AND PRE-PEORIA LOESSES IN LOUISIANA
(FROM MILLER ET AL. 1985)

SOIL CHARACTERISTIC	SOIL PARENT MATERIAL	
	PEORIA LOESS	PRE-PEORIA LOESS
Solum thickness	least	greatest
Thickness of A + E horizons	least	greatest
Color (Hue)	least red	reddest
Maximum clay content in argillic	least	greatest
Total clay content in solum	least	greatest
Weatherable minerals in nonclay fraction	greatest	least
Amount of smectite clay	greatest	least
Amount of micaceous clay	greatest	least
Amount of kaolinite clay	least	greatest
Interlayering / interstratification of clay	least	greatest
Fe-oxide content	least	greatest
CEC per unit of clay	greatest	least
Soil pH	highest	lowest
pH-dependent CEC and acidity	least	greatest
Extractable acidity (BaCl ₂ , TEA	least	greatest
% Al saturation (effective CEC basis)	least	greatest
% base saturation (effective, NH ₄ OAc at pH 7.0, summation of cations)	greatest	least
Exchangeable Ca/Mg ratio	greatest	least
Total and extractable P	greatest	least

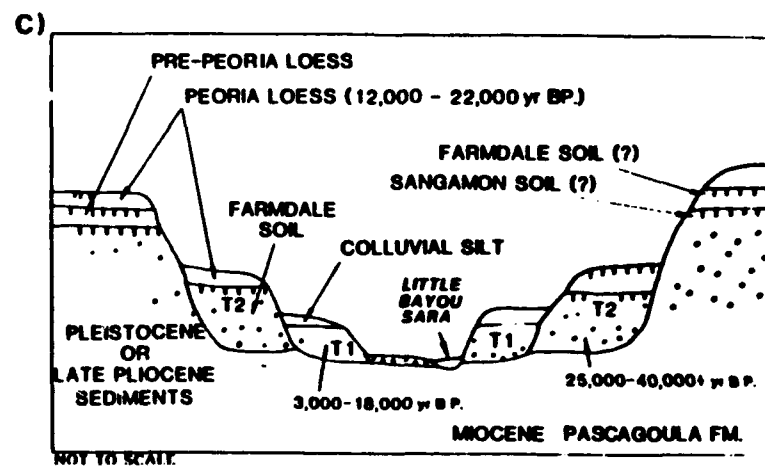
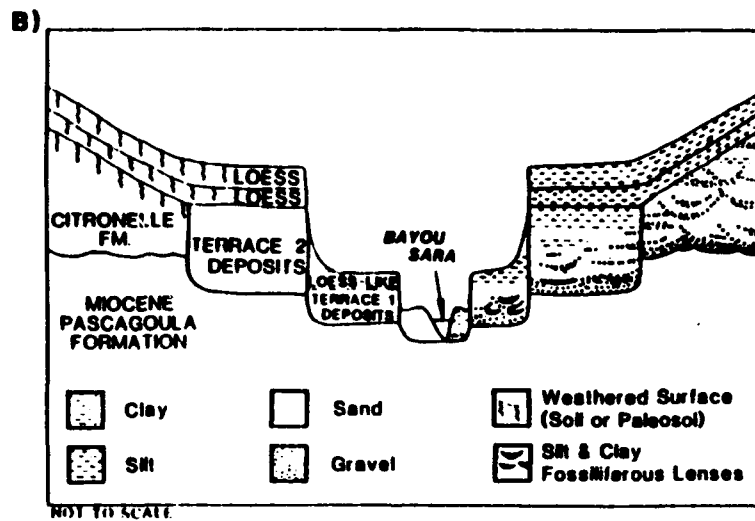
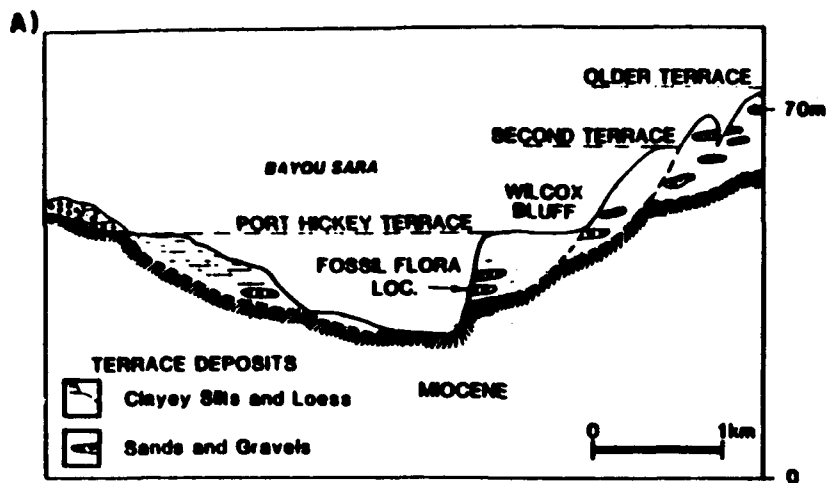


Figure 2: Contrasting concepts of terrace stratigraphy in the Tunica Hills (Mossa et al. 1986).

Several possible factors have caused terrace development and entrenchment in the Tunica Hills. Fisk (1938) hypothesized that entrenchment and bluff-cutting took place along Bayou Sara as the Mississippi River, migrated eastward and caused the streams to increase their gradients and cut through the terrace deposits. This possibility was considered plausible by Delcourt and Delcourt (1977), Alford et al. (1983), and Mossa and Autin (1989). Others believe that local uplift may also be accentuating the steep gradients of these streams (i.e. Fisk 1938). Furthermore, others believe that incision was caused by eustatic or regional factors spanning a long period (Otvos 1980). The sediments within the terrace sequences are believed to be associated with aggradation during marine transgressions (Fisk 1938; Delcourt and Delcourt 1977; Otvos 1980). Otvos interpreted the younger terrace as cut in response to the Woodfordian marine regression. Alford et al. (1983) expressed the opinion that the causative factors of terrace development in the area are far from established.

There has been much interest and some disagreement on the number, nature, and age of the terraces and stratigraphic units in the Tunica Hills (Figure 2). Fisk (1938) was the first to describe the morphostratigraphy of the terraces in the Tunica Hills. He believed that at least three terrace deposits were unconformably overlying the Miocene clayey siltstones and sands. The name Port Hickey was assigned to the lowest surface, and was correlated with the fluvial-trending Prairie Terrace of central Louisiana. Wilcox Bluff was considered part of the Port Hickey sequence and was thought to be mid-Wisconsinan in age. Lower terraces were recognized, but considered as merely benches notched into the Port Hickey alluvium. Across the Lower Mississippi Valley, Fisk recognized at least two older surfaces. The Second Terrace was considered to be equivalent to the Montgomery Terrace and was thought to date to the Sangamon glaciation. The Higher Terraces complex was undifferentiated, but was considered equivalent to the Bentley and Williana. Fisk (1938) described the sequence at Wilcox Bluff as capped by loess or loess-like material.

Delcourt and Delcourt (1977) presented a different interpretation. They recognized two alluvial fills. The lowest terrace (Terrace 1), was considered to be Woodfordian to Holocene in age based on a scattering of radiocarbon dates ranging between 12,740 and 3,457 B.P. The silty sediments overlying Terrace 1 were interpreted as reworked rather than *in situ* loess. The surface associated with Wilcox Bluff was designated Terrace 2 and interpreted as being Sangamonian because the underlying sediments contain a distinctly warm-temperate plant assemblage.

Otvos (1978, 1980, 1981) expressed yet another viewpoint. Considering the silt on the low terrace (T1) to be *in situ* rather than reworked loess, he interpreted the fill as older and probably deposited during a Farmdalian high sea level stand. He obtained dates between 33,720 and 3,250 B.P., but rejected the younger dates as contaminated. Wilcox Bluff was considered equivalent to the low terraces and was assigned a Farmdalian age.

Alford et al. (1983) reassessed the terrace stratigraphy of the Tunica Hills by resampling and additional radiocarbon dating. They inferred that Delcourt and Delcourt

(1977) were correct about the reworked condition of the loess because the silts lacked primary carbonates and contained sand stringers and occasional pebbles indicating that the sediments were colluvial. Four organic samples collected from the low terrace (T1) yielded dates from near the base of the fill that yielded dates of greater than 38,000 B.P. They also believed that the samples collected by Otvos (1980, 1981) at other probable T2 sites that dated Farmdalian (30,775 to 25,965 B.P.) might be correlative and valid, and that the terrace was mid-Wisconsinan. Only Peoria Loess was interpreted as present on T2 and the loess buried a weakly developed paleosol. For these reasons, Alford et al. (1983) were reluctant to consider Wilcox Bluff Sangamonian.

The late Quaternary fluvial terrace deposits in the Tunica Hills are also noted for their copious fossil remains, including diverse and well-preserved plant assemblages, freshwater mollusks, and a variety of Pleistocene mammals. Of note among the plant fossils is the reported occurrence of typically boreal species, including white spruce (*Picea glauca*); and tamarack (*Larix laricina*). These are indicative of a cooler and possibly drier Pleistocene climate comparable to the modern Great Lakes region. Boreal and cool-temperate mammals, including bog lemming (*Synaptomys sp.*), meadow vole (*Microtus pennsylvanicus*), and extinct woodland musk ox (*Symbos cavifrons*) have also been reported in West Feliciana Parish, just south of the study area. Other extinct species include sloths and armadillos such as extinct giant armadillo (*Chlamytherium septentrionale*), extinct Pleistocene armadillo (*Dasybus bellus*), extinct ground sloth (*Megalonyx jeffersoni*) and extinct ground sloth (*Myiobodon harlani*), rodents such as extinct giant beaver (*Castoroides ohioensis*), flesh-eating mammals such as extinct saber-tooth tiger (*Smilodon floridanus*), and other large mammals such as extinct mammoth (*Elephas sp.*), American mastodon (*Mammuth americanum*), extinct eastern horse (*Equus complicatus*), extinct tapir (*Tapirus copei*), and extinct tapir (*Tapirus veroensis*). (Brown 1938, Steere 1938, Richards 1938, Domning 1969, Lowrey 1974, Delcourt and Delcourt 1977, and Givens and Givens 1987)

Local Stream Alluvium - Alluvium was frequently mapped across the width of most valleys, including terrace deposits older than Holocene. Topographic evidence and pedologic data indicate that several terrace surfaces, which are classified by the Louisiana Geological Survey as Deweyville, Prairie, or perhaps Intermediate Terraces complex, were included in this delineation. Subdivision of the units in the smaller alluvial valleys was not feasible because of map scale.

Local streams in the project area have incised into Pleistocene deposits. The landforms deposited by such streams are proportionately smaller than the Mississippi. Since the local gradients are steep, the currents are generally swift through the headwaters and upper portion of the basin. As the creeks approach the Mississippi River, or its floodplain, velocity generally decreases. Also, flow can be bidirectional in portions of the streams, depending upon the stage of the Mississippi. The mouths of local streams generally experience backwater when stages in the Mississippi River are high, and flow toward the Mississippi when stages in the river are low. Local stream alluvium is dominated by the

mineralogical suites of the area it drains. In the proposed project area, geologic units principally include the High Terraces complex, which is dominated by kaolinite and has an eastern Gulf of Appalachian heavy mineral suite, and loess which has the mineral suite of its source, the Mississippi River.

Part of the lower section exposed in the local stream bottoms is considered to be equivalent to the Miocene Pascagoula Formation in Mississippi. These sediments may have been deposited in a brackish-water deltaic (Brown et al. 1944), or a shallow marine (Cullinan 1969) setting. Other investigations suggest there are both fluvial and brackish components (Fisk 1944; Parsons 1967; Otvos 1982). Lithologies of the lower section include greenish clays, silts and sands that have muddy pebble-sized rip-up clasts. The greenish clays and silts are typically indurated.

Mississippi Alluvial Valley Deposits - The lower Mississippi River alluvial valley, extends from Cairo, Illinois through southeastern Louisiana where it merges with its deltaic plain. The alluvial valley consists of distinctive meander belts; and a variety of delta complexes that are the product of the shifting of the Mississippi River during the Holocene. Geologic environments in the Mississippi River alluvial valley and in the proposed project area recognized by Fisk (1947) were meander belt deposits (including point bar environments), topstratum and slough, abandoned channel environments (including chute cut-offs and neck cut-offs), natural levee deposits, and backswamp deposits.

Deposition with meander belts takes place by two major mechanisms. One is by downstream migration of meander bends which builds lateral accretions on the floodplain. The second is vertical accretion, where the meander belt grows upward due to sedimentation associated with overbank flooding. Geomorphic features generally associated with lateral accretions of the floodplain include: point bars, mid-channel islands, ridges, swales, oxbow lakes, chute and neck cut-offs, and other features. Geomorphic features associated principally with vertical accretion of the floodplain are natural levees, crevasses and crevasse splays, and backswamps.

Lateral accretion deposits are directly related to meander bend deposition and migration. Meander bends have a concave bank or cut bank and a convex bank or gently-sloping point bar, typically composed of sandy material deposited during recent floods. The concave bank becomes oversteepened by the deep scouring action of the stream in bendways, and caves into the river. As the caving bank retreats, the opposite convex bank advances by accretion of sand, derived partly from upstream scouring and deposited as point bars in the slackwaters within the bend.

Most point bars have a submerged arcuate ridge-like extension attached at the downstream end, which separates a slackwater portion of the stream from the deep part of the channel near the opposite shore. During high water, deposition takes place on the bar area and a ridge is developed. Vegetation growth stabilizes this bar, and decreases the flow

velocity so that it traps more sediment. During the following low stage, the slackwater slough receives some filling of fine sediments carried in migration. As channel migration continues, sand accretion progresses and the slough may become blocked off from the river by bar growth and become a lake. As the bar grows, a series of alternating arcuate ridges and intervening swales develops. The bar ridge gradually builds to flood stage height and as the accretions become further removed from the river, the sloughs fill with fine floodwater sediments. Ridges within a point bar area often mark the highest point within the meander belt, sometimes rising above the level of the crest of the natural levees on the opposite side of the channel. Large swales occur within the accretion topography which marks the stages in the downstream progression of meander loops. Much of the topography at Iowa Point reflects this point bar development.

The alluvial banks of the lower Mississippi River are subject to continual erosion and migration. River bends normally tend to move downstream as the result of the progressive effects of bank erosion. Cutoffs occur as a result of the gradual erosion at and over the necks of bends. If local conditions are appropriate, typically during high water, a meander bend may be shortened or cut off. The cutoff may result in abandonment of the former channel, or a situation in which both channels receive part of the flow. The location where the cutoff occurs, at the head or neck of the loop or closer to the outer bend, influences the likelihood of whether the channel will leave behind an oxbow lake or a mid-channel island.

Vertical accretion deposits and geomorphic features are associated principally with overbank flooding of the channel. Partial sorting of alluvium takes place when the stream overtops its banks. As this occurs, there is a decrease in velocity and transporting capability of the water which results in rapid deposition of sediment. As the velocity of the water decreases, sand is deposited initially near the channel and then is followed by silt and clay. The clayey backswamp sediment is deposited by still or slowly moving water in low areas in back of the natural levees.

The natural levees of the Mississippi are typically best-developed on the outside of river bends as low, sloping, wedge-like ridges of sediments over a mile in average width, tapering into the adjacent lowlands. These levees are being constructed above the general level of the floodplain basins and are the topographic forms which cause the meander belt to stand up as an alluvial ridge. Levee crevassing and splay development generally occur on the concave part of the meander bend. The crevasse channels are in most cases incised and flow into the distal drainage networks which parallel the slope of the flood basin floor.

Other geomorphic features in the alluvial valley are associated with mass wasting or gravitational processes, such as bank failures and hillslope erosion. According to Elliott (1932), historical rates of bank caving prior to extensive revetting averaged 30 to 75 ft per year, with some banks retreating at rates of 225 ft per year. Grain size influences the rate of recession, as the meander belt shifts rapidly downstream cutting into deposits of sandy point bars which offer little resistance (Fisk 1947). Bank recession of sandy deposits is a

continual movement associated with a rapidly and regularly retreating bank with smooth shorelines. The flow encounters more resistance when it cuts into fine-grained bank deposits. This results in slower rates of meander migration. Fine-grained deposits recede by slumping, which results in irregularly scalloped banklines characterized by riverward-tilted blocks. Because the channel bed and bank deposits downstream are of a finer grain, the rate and amount of bank caving in the lower river decreases as the mouth of the river is approached.

Hillslope processes are active because of the steep gradients in the vicinity of the project area. Sediment is reworked by processes operating over varying timescales from millenia to days. The loessal materials found near much of the proposed project area are highly erodible. Hillslope processes operate partly in conjunction with minor streams, which transport much of the loessal sediments from the Tunica Hills. These minor streams, which drain the local uplands, have built very steep alluvial fans near the margins of the alluvial valley. Several minor alluvial fans, ranging from about 0.5 to 2.0 sq mi in surface area, are present in the vicinity of the proposed project area, all at the heads of minor creeks which drain the loess-capped Tunica Hills and terminate at the Mississippi River floodplain. Some of the creeks in the project area drain directly into or towards the Mississippi River, and have small waterfalls.

Landforms in the Mississippi River valley are of proportionately greater size than smaller rivers and the floodplain elevations in the proposed project area show pronounced relief created by such large scale forms. Local relief on exposed point bars in the lower Mississippi River may be over 25 ft. On the east bank, ridges on Tunica Island have elevations of over 50 ft, swales have elevations of less than 40 ft, and the section adjacent to the river has elevations of less than 50 ft MSL. On the west bank, the majority of the floodplain is less than 40 ft in elevation, with several lakes and sloughs showing elevations of less than 30 ft, and unvegetated sections of point bars with elevations less than 15 ft MSL. Large swales marking the downstream progression of meander loops vary from 500 to 1000 ft in width, with some reaching 1500 ft. Minor swales are generally associated with point bar deposits within meander loops. The majority of these swales are 100 to 500 ft wide, with some reaching over 1000 ft.

The Mississippi River alluvium is mineralogically distinct from the High Terraces complex, local late Quaternary Terraces, and local stream alluvium. Mineralogical studies of the Mississippi River alluvium indicate that smectite minerals are predominant in the clay-size fraction, with secondary amounts of micaceous clays (Brown et al. 1970). Associated with these are lesser amounts of kaolinite, chlorite-vermiculite intergrade, and quartz minerals. The sand and silt-sized fractions are made up largely of quartz, with a sizeable component of feldspars and weatherable minerals such as biotite and hornblende. Mississippi River silts, in contrast with the Sicily Island and Peoria loesses, also do not have detectable quantities of calcium carbonate.

Process Environment of the Lower Mississippi River in Louisiana

Much of the geomorphic change of the Mississippi River Valley is related to the dynamic processes involved. The process environment of the Mississippi River, being the largest river on the North American continent with a drainage basin of about 1.24 million square miles, differs appreciably from smaller rivers. Figures 3 and 4 show the most significant floods during the period of record.

Stage and discharge variations generally decrease downstream because of the lower gradients and velocities (Figure 5). Extreme discharges and stages are associated with excess runoff, snowmelt, antecedent moisture, storm surges, and combinations of these factors. Channel discharge is markedly seasonal, with low flow occurring in the summer and fall, and high flow during the winter and spring. Precipitation in the basin is abundant throughout the year, and flow is sustained during dry periods by groundwater discharge. The effect of tides increases downstream and is notable as far upstream as 35 mi above Baton Rouge during extreme low water (Kolb 1962).

The river thalweg shows a series of alternating riffles and pools that range from 15 to over 100 ft in relief (Figure 5). The pools and riffles show progressively lower elevations downstream to New Orleans and the thalweg elevations deepen by 20 to 50 ft in the vicinity of the Head of Passes. From upstream to downstream, the river banks are composed of progressively finer deposits, meanders decrease in number, and the channel becomes narrower, straighter, and deeper. Sandbars are rare and no major tributaries enter the study area. The river bed has been aggrading in recent years (Cowdrey 1977; Watson 1982).

According to several approximations, the sediment load in the lower Mississippi River has decreased in the past century. The suspended sediment load has been estimated to be 342 million tons per year (Dole and Stabler 1909), 544 million tons per year (USACE 1939), 400 million tons per year (Holle 1952), 263 million tons per year from 1949 to 1966 (Holeman 1968), 299 million tons per year from 1950 to 1962 (Keown et al. 1986), and 161 million tons per year from 1970 to 1978 (Keown et al. 1986). Upstream modifications, particularly dam construction, soil conservation practices, and the increasing amount of flow diverted through the Old River control structures into the Atchafalaya River have resulted in decreased discharge and decreased sediment load.

The suspended-sediment load and concentration varies with discharge and location along the lower 315 mi of the Mississippi River (Figure 5). At less-than-average and average discharges, the suspended-sediment concentration and load decreases down the reach, with sediment being dropped and stored on the riverbed (Everett 1971; Wells 1980; Meade 1987). At slightly greater-than-average discharges, suspended-sediment load and concentration are fairly constant down the reach, with sand concentration decreasing and silt-clay concentration increasing (e.g., Schoelhamer and Curwick 1985). At much-greater-than-average discharges, the sediment load increases down the reach, with much of the material being resuspended from the riverbed.

MISSISSIPPI RIVER AT RED RIVER LANDING

Highest Annual Stages in Feet

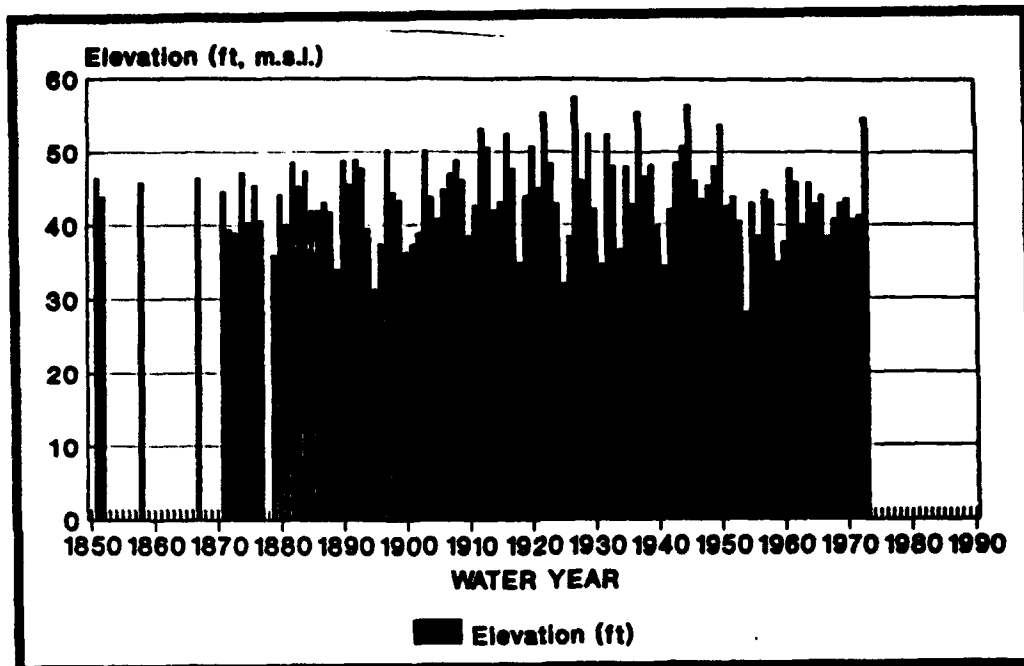


Figure 3: Maximum stages of the lower Mississippi at Red River Landing (mile 302) (data from U.S. Army Corps of Engineers, New Orleans District, 1974).

MISSISSIPPI RIVER BELOW DIVERSION **Maximum, Mean, and Minimum Discharges**

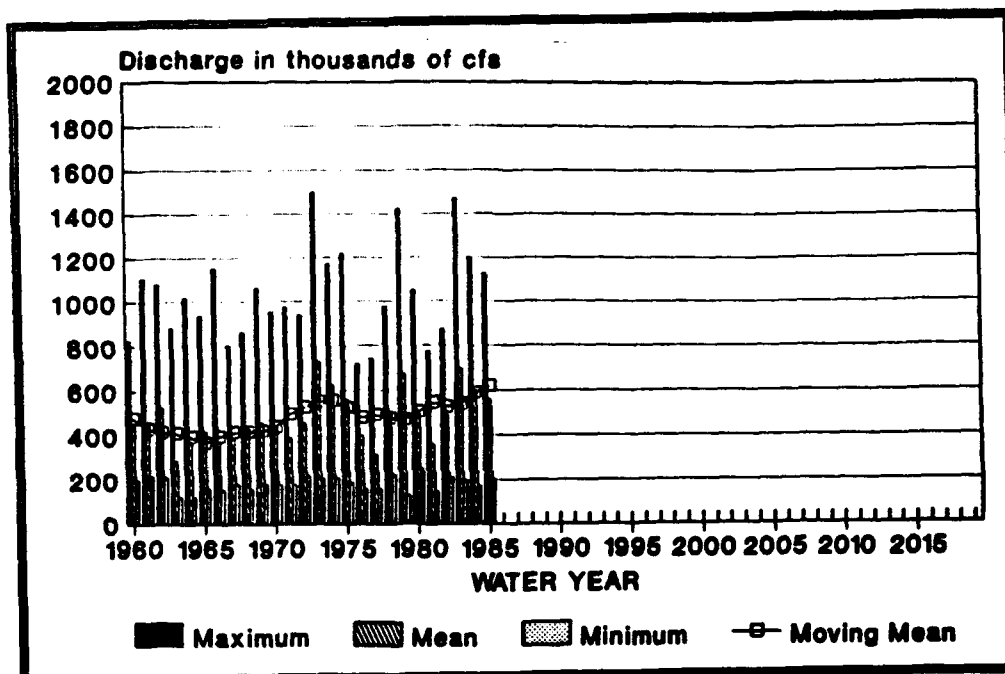
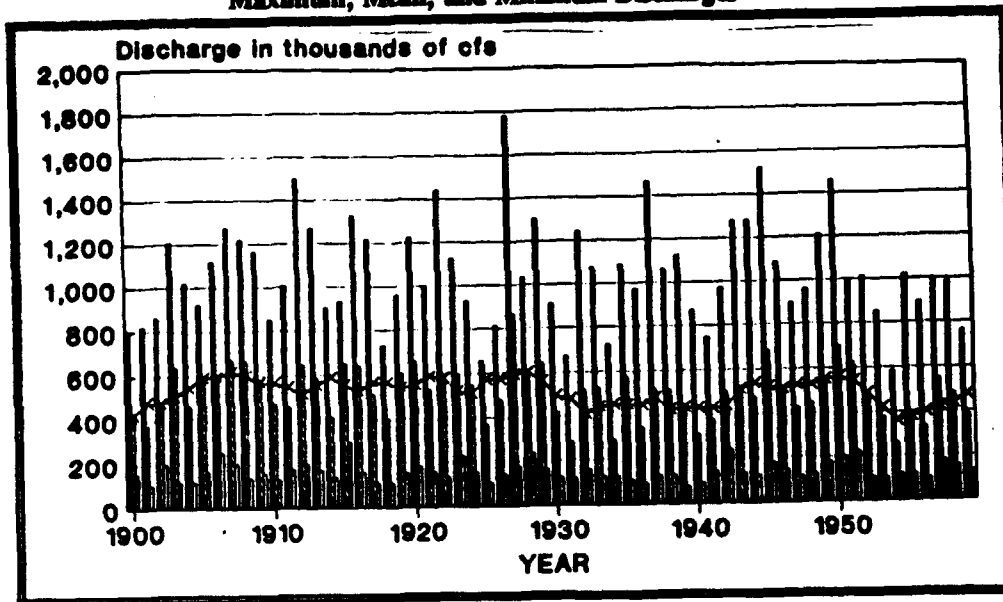


Figure 4: Discharges, and corresponding averages, of the lower Mississippi River below the Old River Diversion from 1900 to 1985 (data from U.S. Army Corps of Engineers, New Orleans District, 1974).

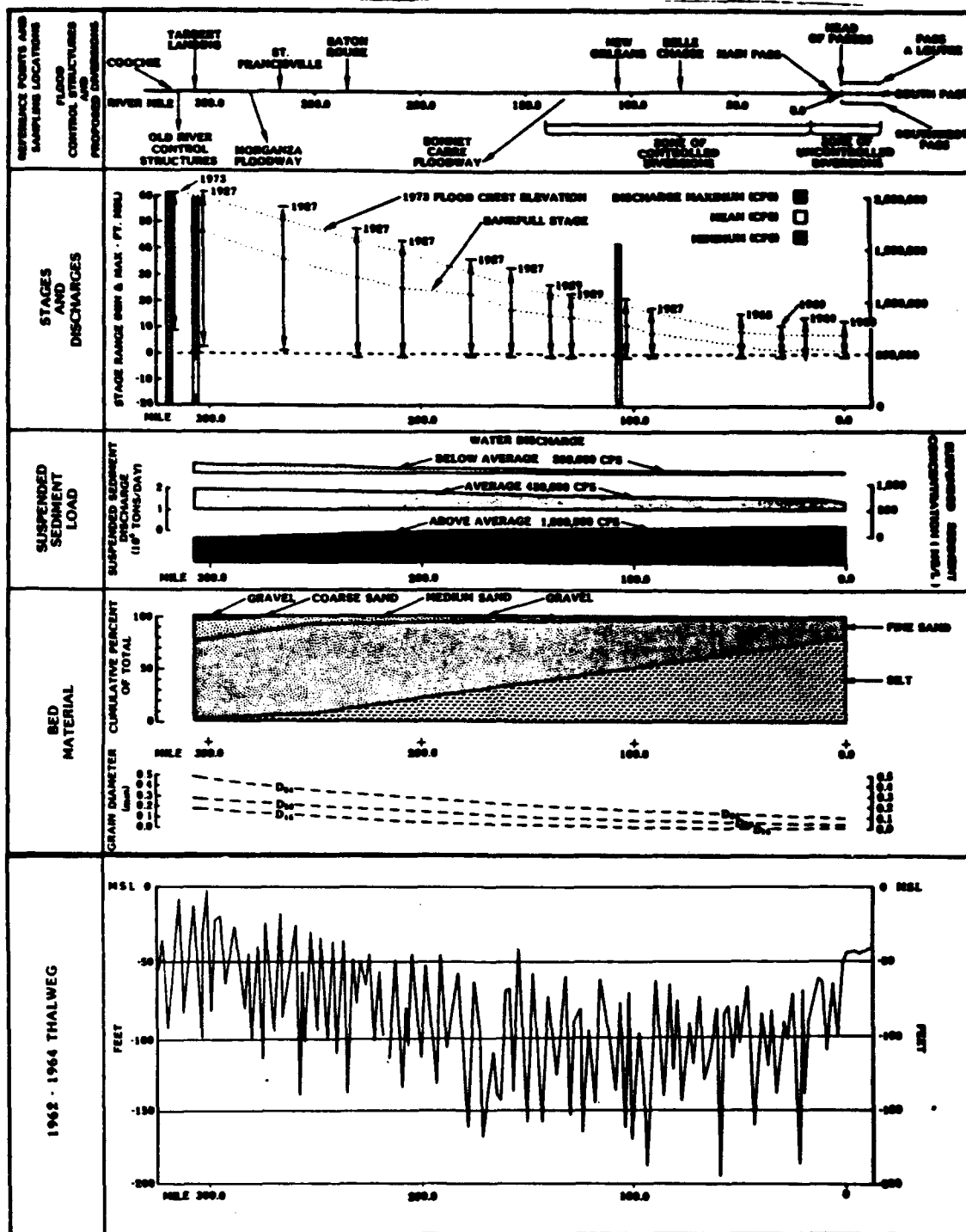


Figure 5: Physical characteristics of the Lower Mississippi River. Data on miles and structures from Keown et al. (1977) and USACE (1984); stages and discharges from USACE, where dates indicate year of peak stages; suspended-sediment discharge from Everett (1971), Wells (1980), and Meade (1987); bed material data from Keown et al. (1986); and thalweg elevations from USACE (1971). Figure from Meade (1988).

Suspended sediment in the lower Mississippi River also varies with depth; higher concentrations occur near the river bottom, primarily because of variations in sand concentration (Fisk 1952; Wells 1980). Silt-clay concentrations vary less than 2% from top to bottom. Sand concentration can range from 10% to 37% for high flows and from 13% to 32% for low flows from the uppermost to lowermost 20% of the water column.

The grain size of bed material decreases appreciably downstream in the lower Mississippi, showing decreasing trends at all the major percentile values (Keown et al. 1986) (Figure 5). At Tarbert Landing, the bed material consists almost entirely of fine and medium sand; fine sand constitutes 76% of the bed material, medium sand, 20%, gravel, 2%, coarse sand, 1%, and silt, 1%. Between mile 200 and 300, the bed material becomes slightly finer, consisting of 6% medium sand, 86% fine sand, and 8% silt. Between mile 100 and 200, the bed material consists of 1% coarse sand, 1% medium sand, 61% fine sand, and 37% silt. The major component of the bed material changes near mile 100 from fine sand upstream to silt downstream. Between mile 100 and mile 0, bed material consists of 1% medium sand, 32% fine sand, and 67% silt. The size of the bed material can vary appreciably within a given cross section (Wells 1980) and has decreased by approximately 20% from the early 1930's to 1975 throughout the lower Mississippi River (Keown et al. 1981, 1986).

Local elevations, as characterized in the previous section, are a key factor for determining the localized frequency, duration and depths of floodwaters. Historical records show that upstream at Vicksburg, stage elevations have decreased for a given discharge (Figure 6). Further, the average discharge since the 1800s shows a generally decreasing trend, attributed partly to the accumulated storage in reservoirs since about 1900 (Figure 7 and 8). Both of these in conjunction tend to decrease the flood frequency and magnitude, particularly at the highest locations on the floodplain and nearby low terraces.

Geomorphic Changes of the Lower Mississippi River in Louisiana

Several influences or causes of geomorphic change are notable in the lower Mississippi River valley. The geologic or long-term history within the project area has been strongly influenced by sea level fluctuations in the Gulf of Mexico and the shifting of the Mississippi River and its distributaries. Sea level fluctuations influenced the slopes and therefore the load and channel characteristics of rivers draining into the oceans. During lowering of sea level, the streams cut deep trench-like valleys. During the succeeding rising sea level, these valleys were alluviated.

When sea level was approximately 300 ft (90 m) below present, during the Wisconsin or latest Pleistocene deglaciation, the Mississippi valley became deeply incised within coastal plain sediments (Fisk 1944). During the glacial maximum, between 20,000

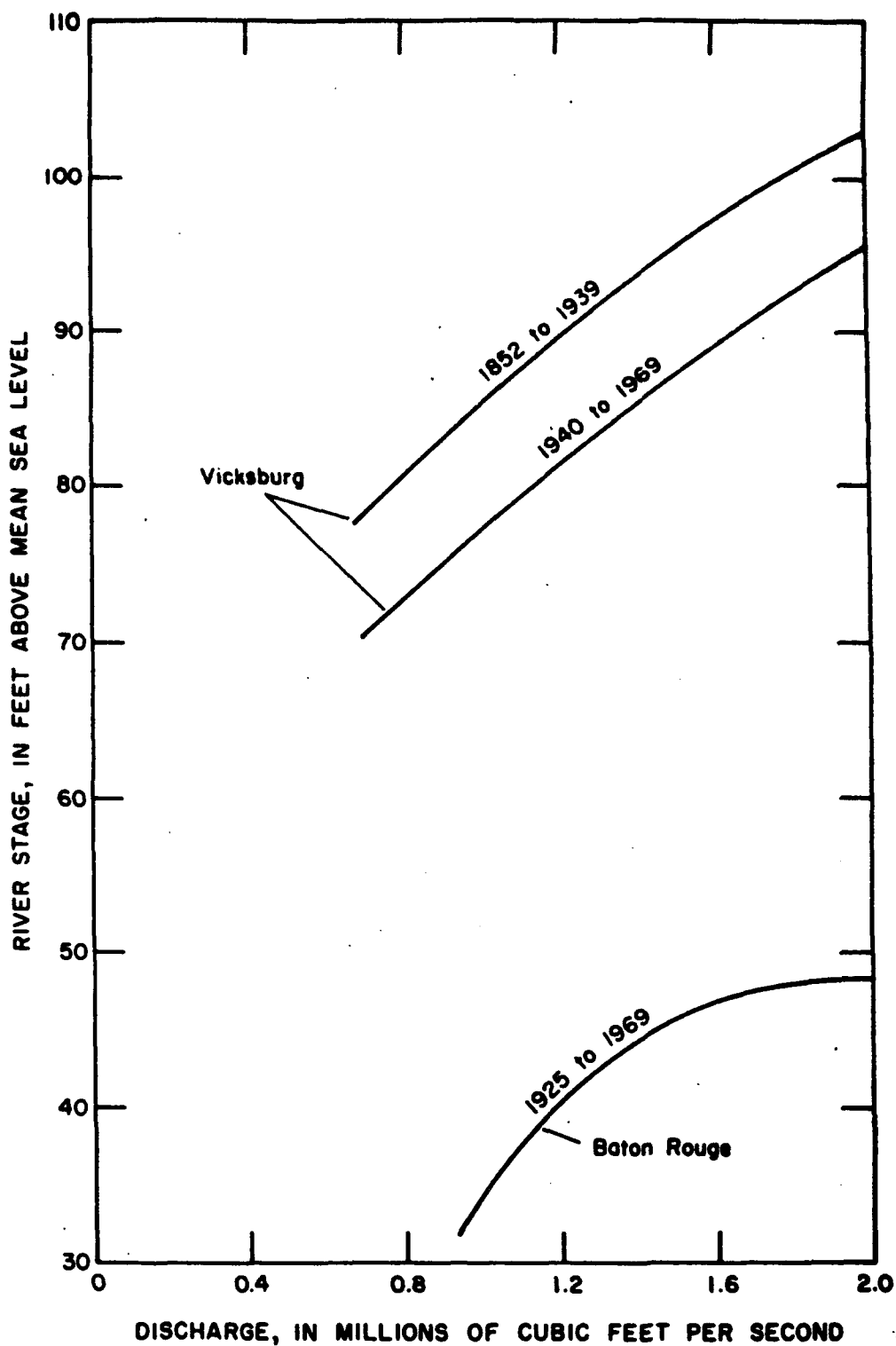


Figure 6: Average stage-discharge relation for Mississippi River at Vicksburg, Mississippi (Mile 435) and Baton Rouge, Louisiana (Mile 238). From Everett (1971).

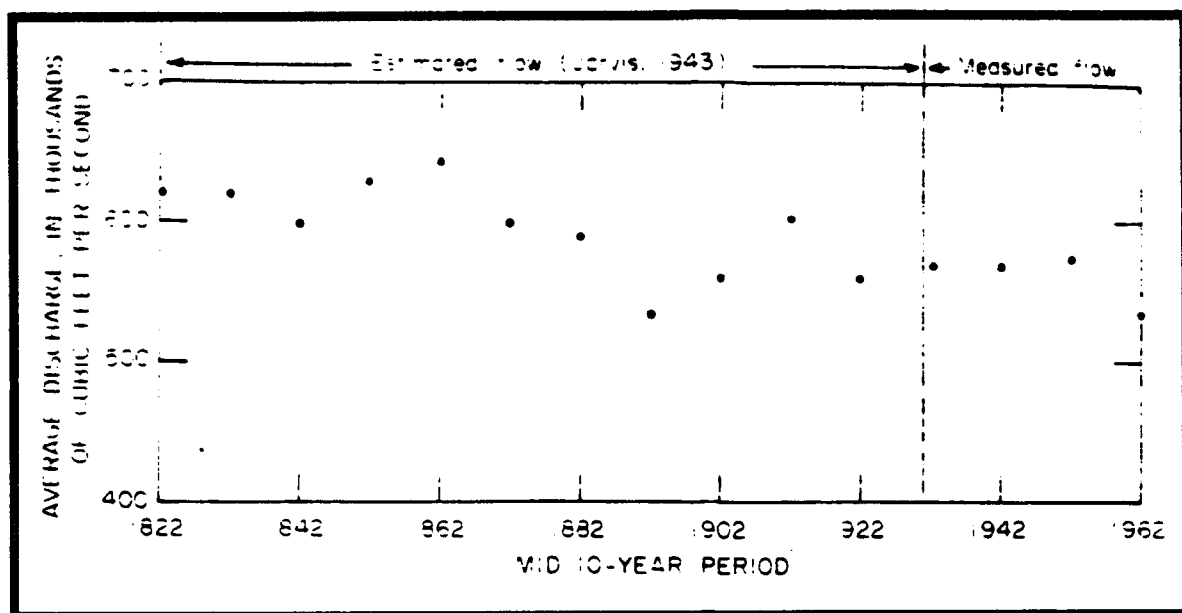


Figure 7: Average discharge for selected 10-year periods, Mississippi River at Vicksburg, Mississippi (mile 435). From Everett (1971).

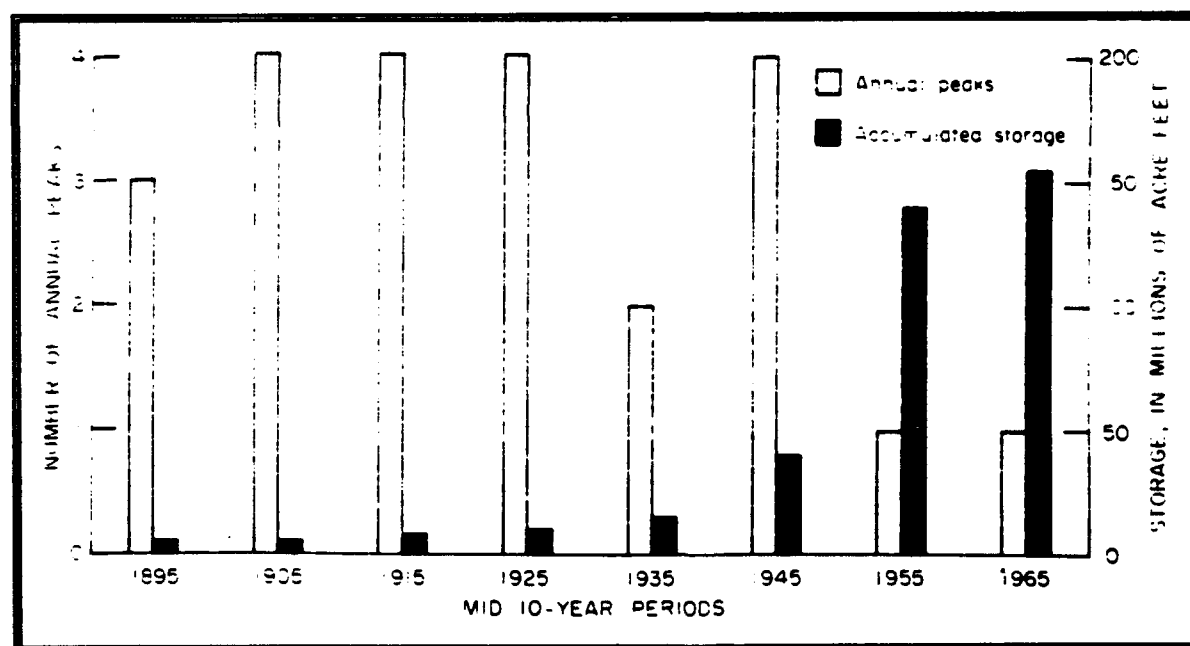


Figure 8: Number of annual peaks exceeding 1.5 million cubic feet per second (cfs) and accumulated upstream storage, 1890-1970, Mississippi River at Vicksburg, Mississippi. From Everett (1971).

and 17,000 years before present, the Mississippi River north of the project area had a braided pattern, that may have persisted as far south as the Gulf Coast (Saucier 1974).

Sea level began to rise after the glacial maximum, and the alluvial sequence shows an upward decrease in particle size, partially brought on by a progressive decrease in slope. According to Fisk (1947), the deposits provide evidence of a gradational reduction in the carrying capacity of the master stream, and reflect a great wave of alluviation which slowly spread upstream. Approximately 100 ft (30 m) of overbank clays and silts overlie an undifferentiated sand and gravel unit of late Pleistocene age. The clays of the Holocene section are divisible into a stack of alternating poorly-drained swamp, well-drained swamp, and lacustrine facies (Krinitzsky and Smith 1969; Coleman 1966).

Since sea level reached its present stand approximately 5000 years ago, there has been little effective change in valley slope and no apparent change in the size of particles carried by the lower Mississippi River (Fisk 1947). The Mississippi River has shifted to a channel with a steeper gradient every 1000 to 1500 years during the Holocene. Each major course or belt of the Mississippi River is associated with a delta complex. The early Holocene meander belts of the Mississippi River occupied courses in the western portion of the delta plain, and later meander belts have occupied courses in the eastern part of the delta plain.

Fisk (1944) identified a meandering history for the Mississippi River in the current occupied channel belt based on orientation of ridges and swales in preserved point bars. The segment of the modern channel near the proposed project area has been occupied for approximately 3000 years (Saucier 1974). Before then, the active channel belt was positioned along the western wall of the lower Mississippi valley and had a poorly developed drainage network in the vicinity of the present channel belt (Fisk 1944). The shifting of the Mississippi River from the western to the eastern side of the valley is believed to be a major cause of stream entrenchment and the development of the lowest alluvial fill as local streams adjusted to changes in base level.

The occurrence of sedimentation in the Mississippi valley can be considered at different timescales, and differing conditions of confinement (i.e. with or without artificial levees that confine floodwaters). Over relatively long timescales, based upon the maximum thickness of the levee and the age of the channel belt, the average sedimentation rate in the vicinity of the project area has been calculated as 0.12 in (0.3 cm) per year (Saucier 1969). Over shorter timescales, Saucier (1983) and Mossa (1989) have reported sedimentation of 60 to 120 cm (2 to 4 ft) since the seventeenth century on the confined batture along the lower Mississippi River south of New Orleans. In one high discharge event, the flood of 1973, the Mississippi's overbank sedimentation in unconfined reaches averaged 86 cm on point bars, 53 cm on natural levees, and 1.1 cm in the backswamp (Kesel et al. 1974).

Some evidence also suggests that sedimentation in confined reaches could possibly exceed that of unconfined reaches because they are subject to flooding on a more frequent

basis. Elliott (1932) noted that the levees could confine and cause deposition of the river sediment, which would reduce the cross-sectional area of the flood channel within a short time. The information regarding the amount and distribution of the levee battures is meager, and the results of previous studies show sediment accumulation as thick as five feet near Memphis and one to three feet in some other places in less than a ten-year period (Elliott 1932).

Channel changes since human occupation of the proposed project area have been quite extensive. Fisk (1944) reconstructed the geomorphic history a few miles upstream from the project area. In the fourteenth century, the courses of the Mississippi River and Red River were close in this area. The Atchafalaya River also formed in the sixteenth century when a westerly migrating meander of the Mississippi River intercepted the course of the Red River and captured its drainage. For years it remained an insignificant distributary of the Mississippi River because it was choked on its upstream end by a log jam on the outer end of Turnbull's Bend, where the Red River flowed into the Mississippi. The Atchafalaya now has numerous tributaries and flow is about one-third of the Mississippi.

Lower Old River was formed in 1831, when Henry Shreve ordered the channel at Turnbull's Bend to be dug to shorten the course of the Mississippi by 15 mi. Soon afterward, the upper portion of the meander loop filled, leaving only the lower course or Lower Old River connecting the Mississippi with the Red and Atchafalaya rivers. Shreve's Cutoff did not eliminate shoaling; it merely transferred the zone of shoaling to new locations on the Mississippi. Since 1831, Old River has been the site of almost continual trouble in the maintenance of navigation. This separated the Red and Atchafalaya rivers from the Mississippi, and caused the Atchafalaya to become a continuation of the Red River. Had Shreve's Cutoff not been made, it is possible that the removal of the Atchafalaya raft would have been followed by diversion of the Mississippi River discharge.

Other changes in the vicinity of the study area included meander cutoffs occurring in the eighteenth and nineteenth centuries (Elliott 1932; Ferguson 1940). In 1722, in the vicinity of mile 260 to 257 AHP, a bend was cut off by natural processes to form False River, shortening the Mississippi River by 21 mi. In 1776, the Homochitto cutoff led to the development of Lake Mary in the vicinity of mile 324 to 322 of the present channel. Lake Mary has distinctive ridge and swale topography indicative of former positions of the Mississippi channel. Topographic evidence indicates that the river may have had mid-channel islands or towheads at the time of cutoff development. The Homochitto River empties into this lake 6 mi from the Mississippi River (Ferguson 1940). Two other bends were artificially cut off by the state of Louisiana in 1831 and 1848. In addition to Shreve's Cutoff at mile 304 to 302 AHP, Raccourci Cutoff in the vicinity of mile 300 to 295 AHP shortened the river distance 19 mi. Neither produced any navigational improvements to the channel upstream.

Other attempts to affect the course of the Mississippi River in the vicinity of the project area include levee and revetment construction. The MRC maps of 1879-'80 show levees constructed on the east bank in the vicinity Tunica Island (Figure 9). By 1921, these levees no longer appeared on the MRC maps. There is no evidence of levee construction currently in the project area. On the other side of the river levees have been built, but not directly across from the project area. Rather, with the construction of Raccourci Cutoff levee were built on the banks of the former channel. Also, the area due west of the project area was incorporated into the Morganza Floodway. In addition to flooding, bank caving has been a problem for various portions of the project area. The Greenwood Bend Revetment was constructed to prevent bank erosion in a portion of the project area and the continuation of bank caving in other portions has led to the current project which will extend Greenwood Revetment upstream. The Iowa Point Revetment was constructed on another portion of the project area in an effort to check bank erosion. That revetment is also being extended upstream. Figures 10 through 14 show the changes the location of the main channel of the Mississippi River in the project area.

Despite human intervention to maintain channel stability and the integrity of the artificial levee, the Mississippi River has migrated significantly in some sections of the project area. The river in this reach is quite dynamic, due to adjustments of the cutoffs. The channel has migrated 4000 ft in places during this period and the size and morphology of a number of mid-channel islands have changed appreciably. One example is Tunica or Round Island, which was depicted on many maps of the Mississippi River from the earliest days of explorations and settlement in the eighteenth century. As for age of the island, it is likely that it was formed when the Mississippi River meandered back across its former floodplain to its current course. In all likelihood, when the river did this, the eastern channel around Tunica Island occupied a swale left from earlier meanders of the river. Given the coarse sand nature of the former floodplain, the ridge separating this swale from the approaching meander of the river could have washed away rather easily. Once this swale was occupied by a portion of Mississippi's channel, this isolated portion of the former floodplain became an island. The island was probably somewhat stabilized in its form by vegetation. According to Saucier (1974), the Mississippi adopted this current channel about 3000 years ago. Given the instability of the material which composes Tunica Island, it was probably formed toward the end of this channel occupation. It would not be inconceivable that Tunica Island as a formation is less than 1000 years old. The morphology and location of Ratliff Lake to the east of Tunica Island and the current channel of the river is almost certainly a remnant of the river formed by the same processes as the former chute channel around Tunica Island.

One of the first detailed maps of the river by the Mississippi River Commission (1879) showed a mid-channel island that measured roughly 2.5 mi north-south, by 2000 ft east-west. At a maximum depth of 32 ft, the eastern channel around Tunica Island was not as deep as the western or main channel that had a depth of 79 ft. As far as can be determined, Tunica Island does not appear to have been the scene of much human occupation

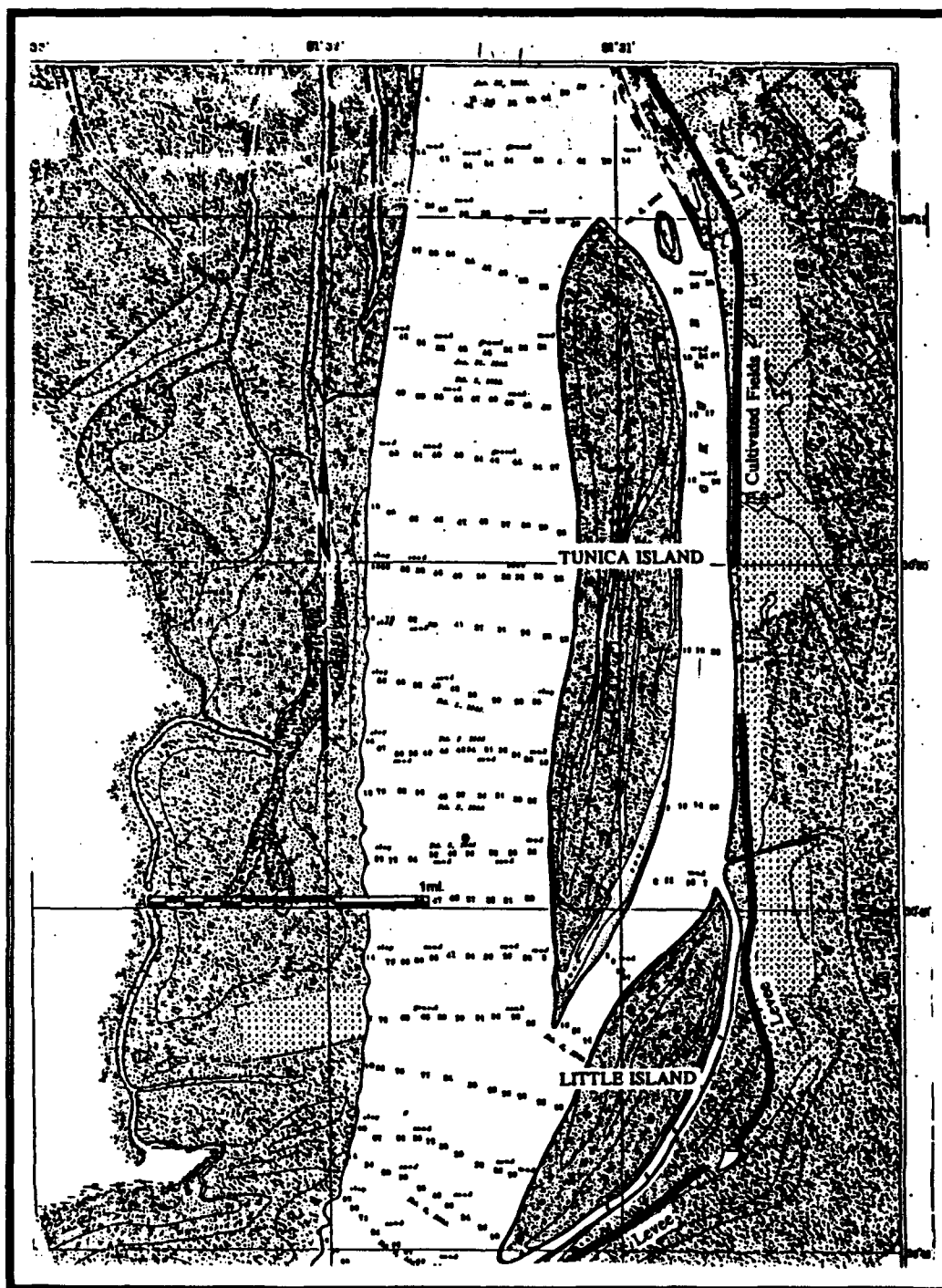
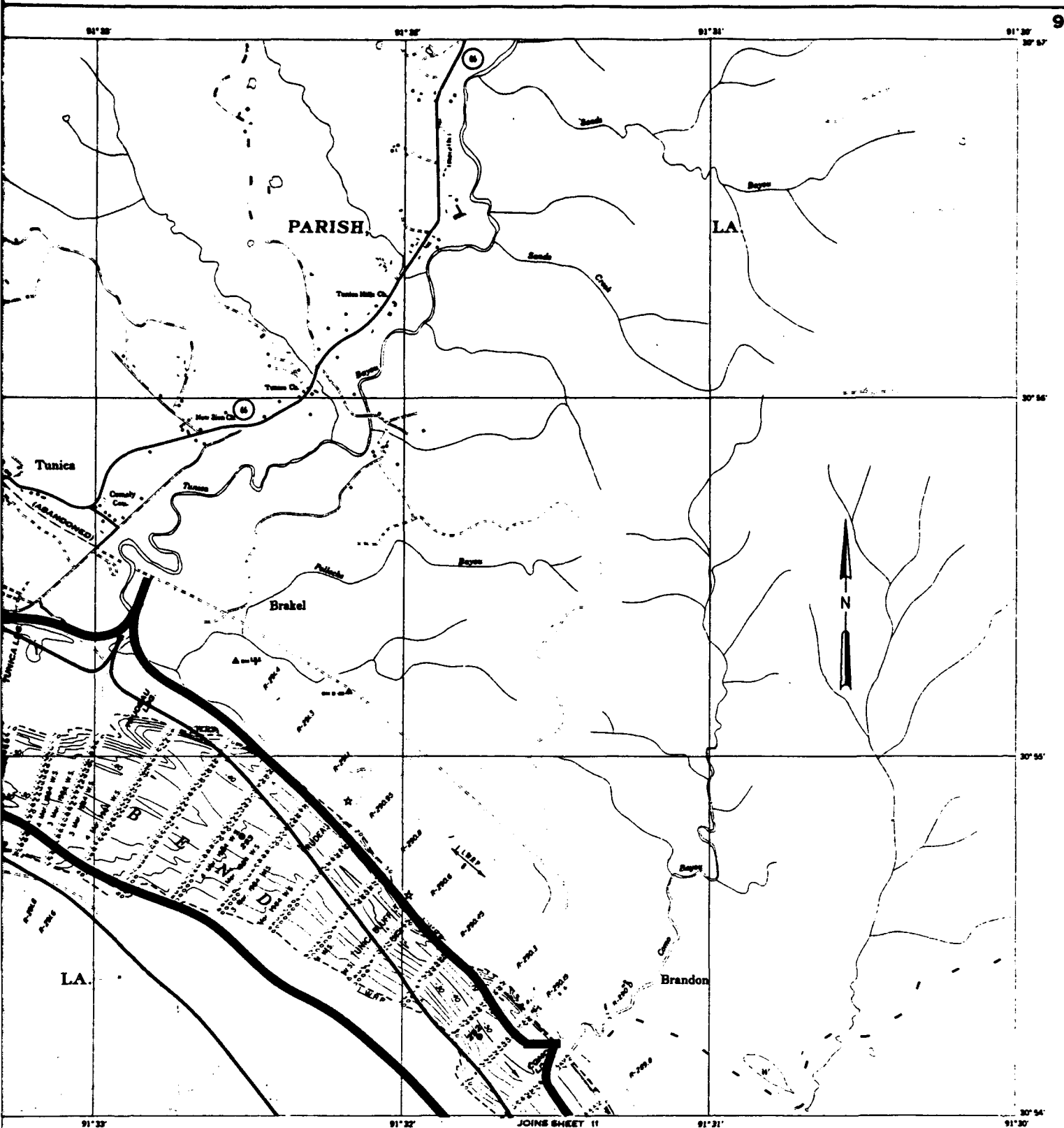


Figure 9: Detail of 1879-80 Hydrographic Map of the Mississippi River showing Tunica and Little Islands.



, 1983-85, Sheet 9. Source: U.S. Army Corps of Engineers, New Orleans District.

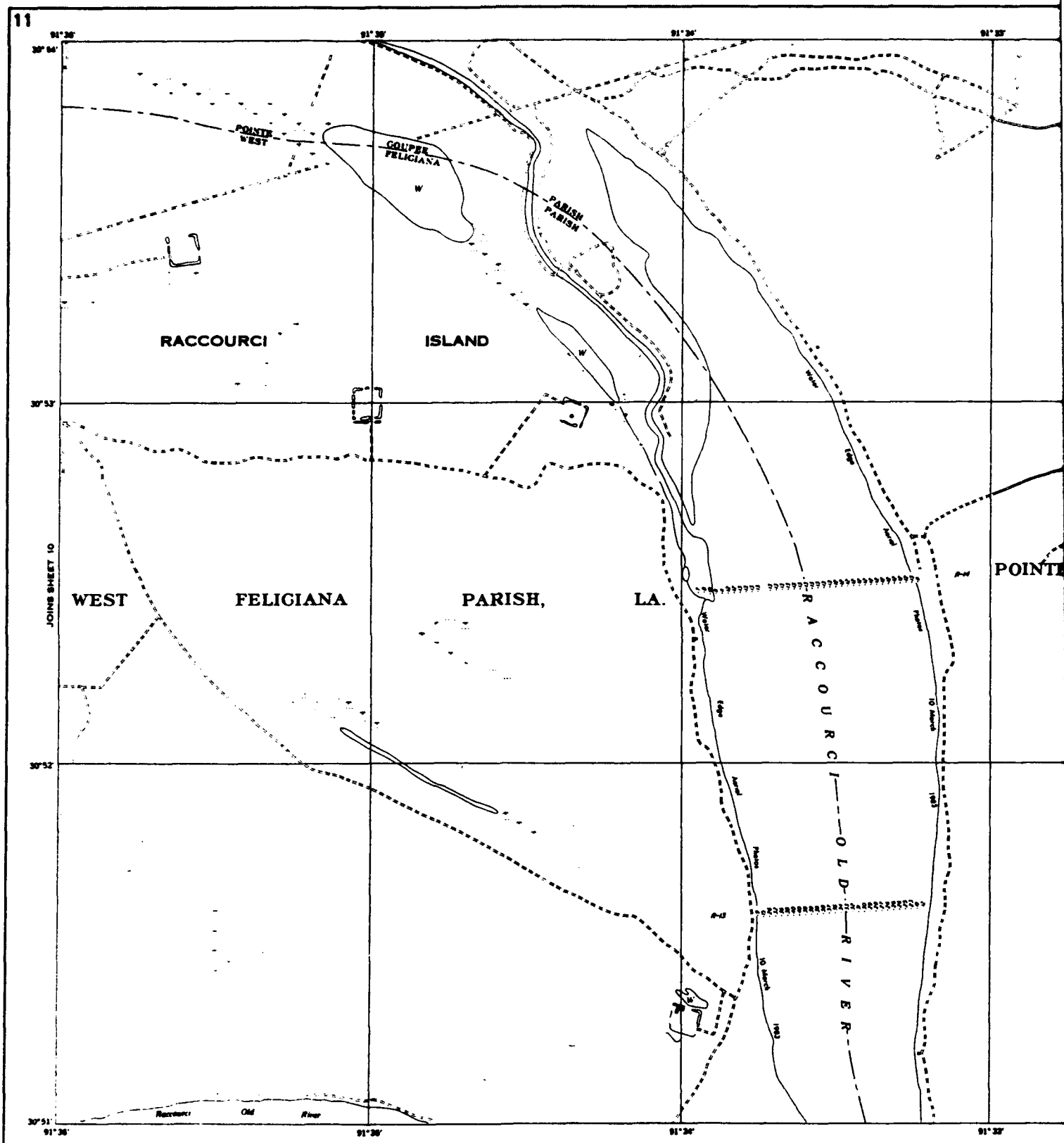


Figure 11: Channel Changes of Mississippi River Shown on Hydrographic Survey, 1983-85, Sheet

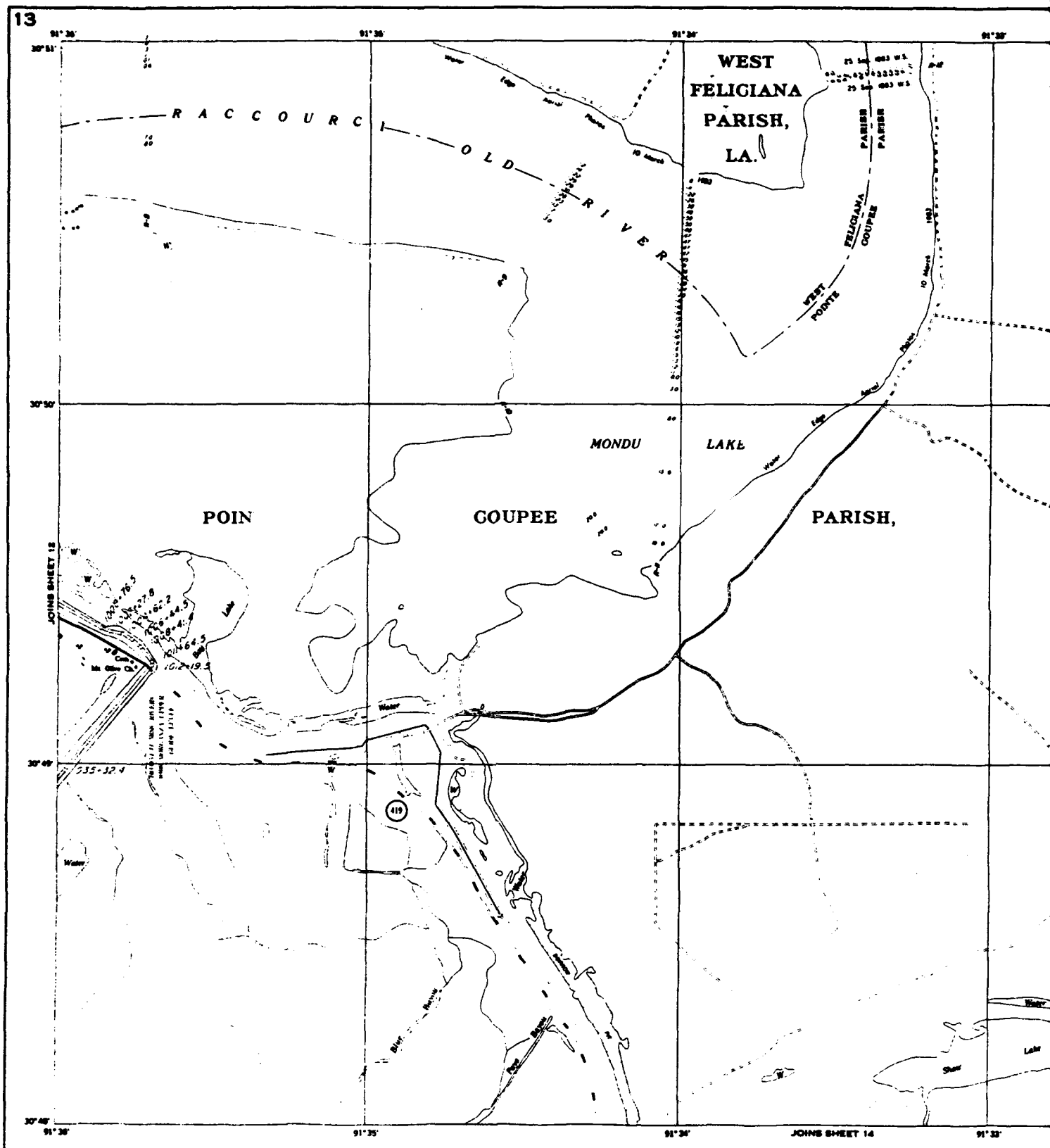


Figure 12: Channel Changes of Mississippi River Shown on Hydrographic Survey, 1983-85, Sh

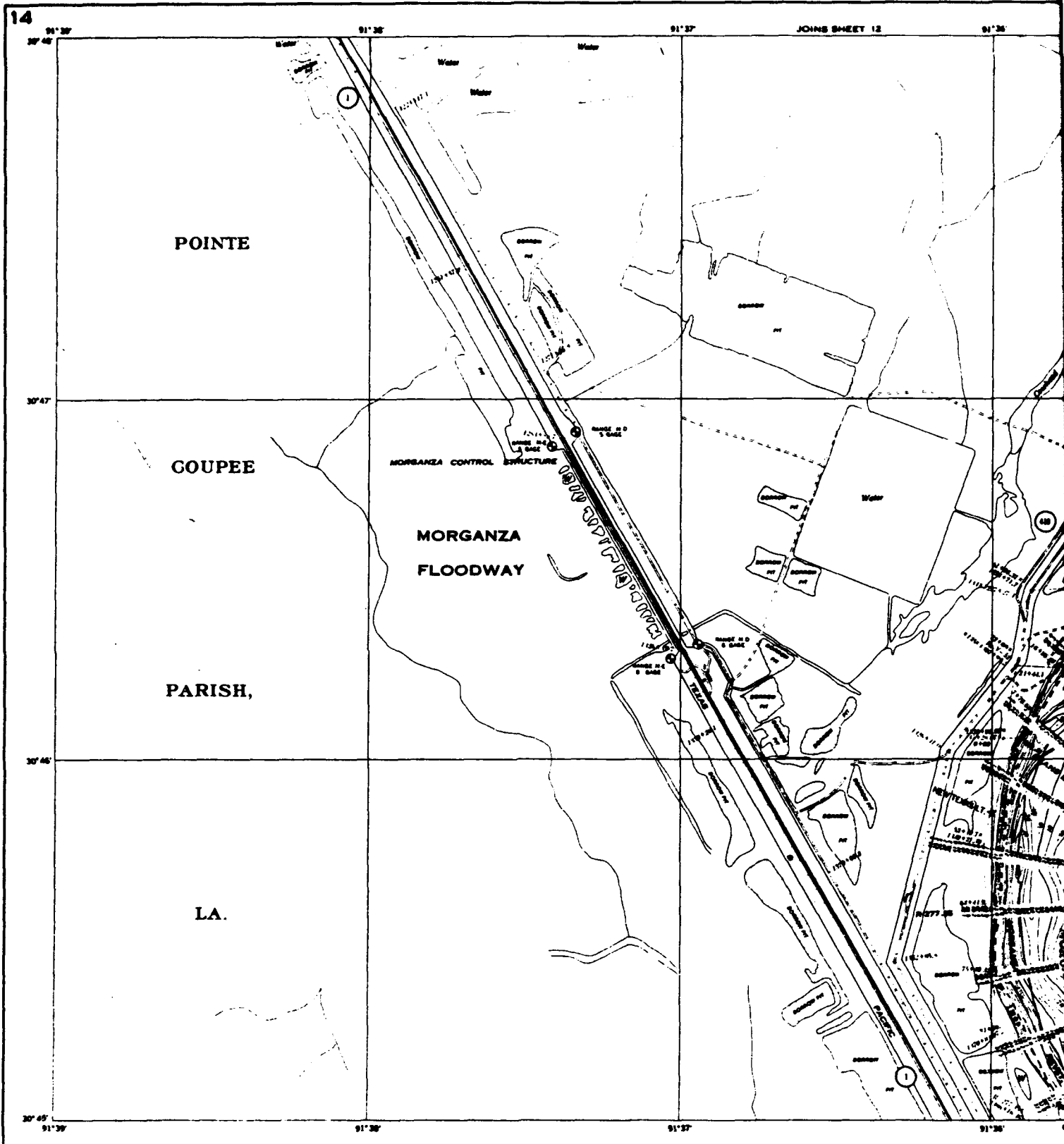
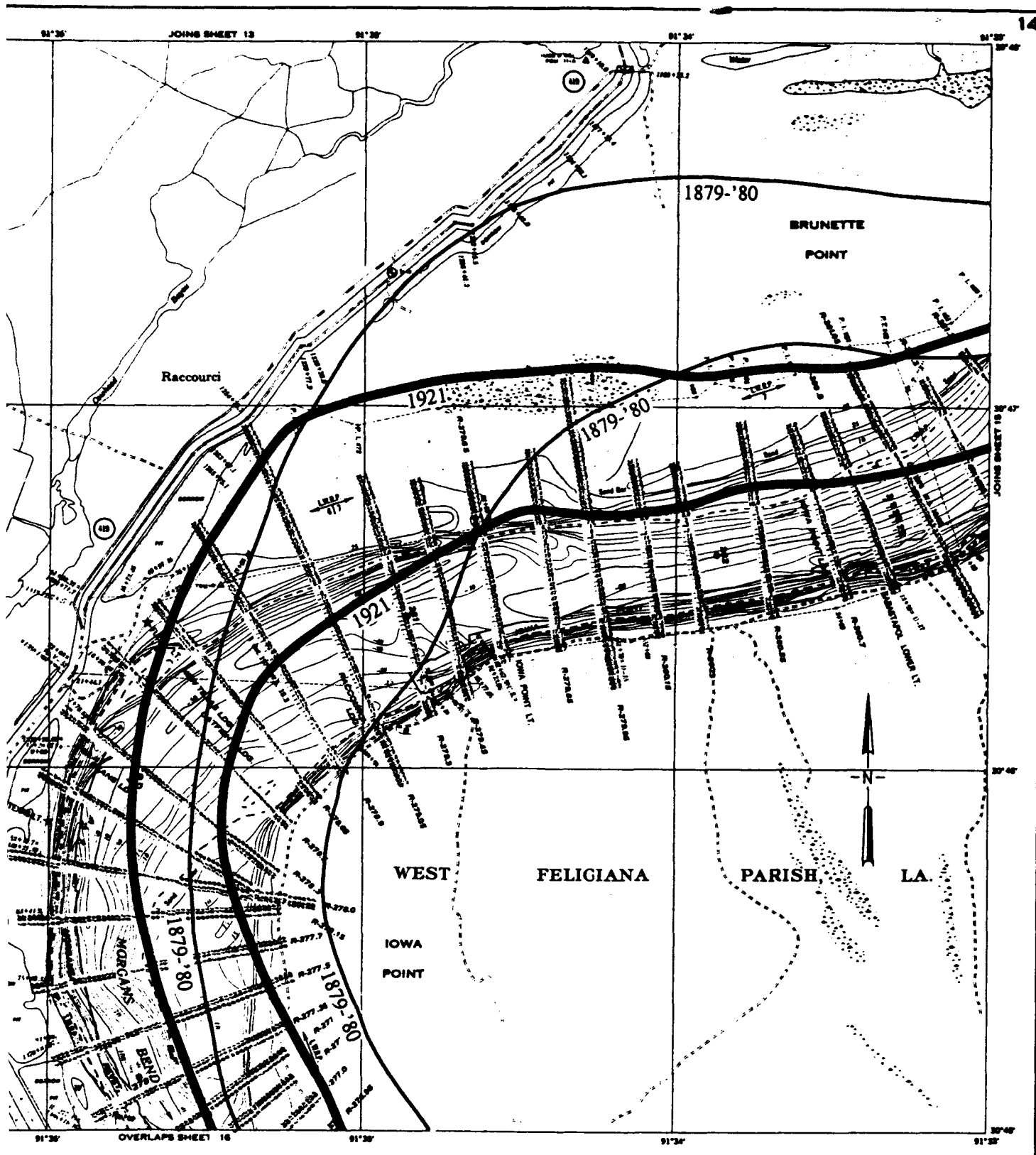
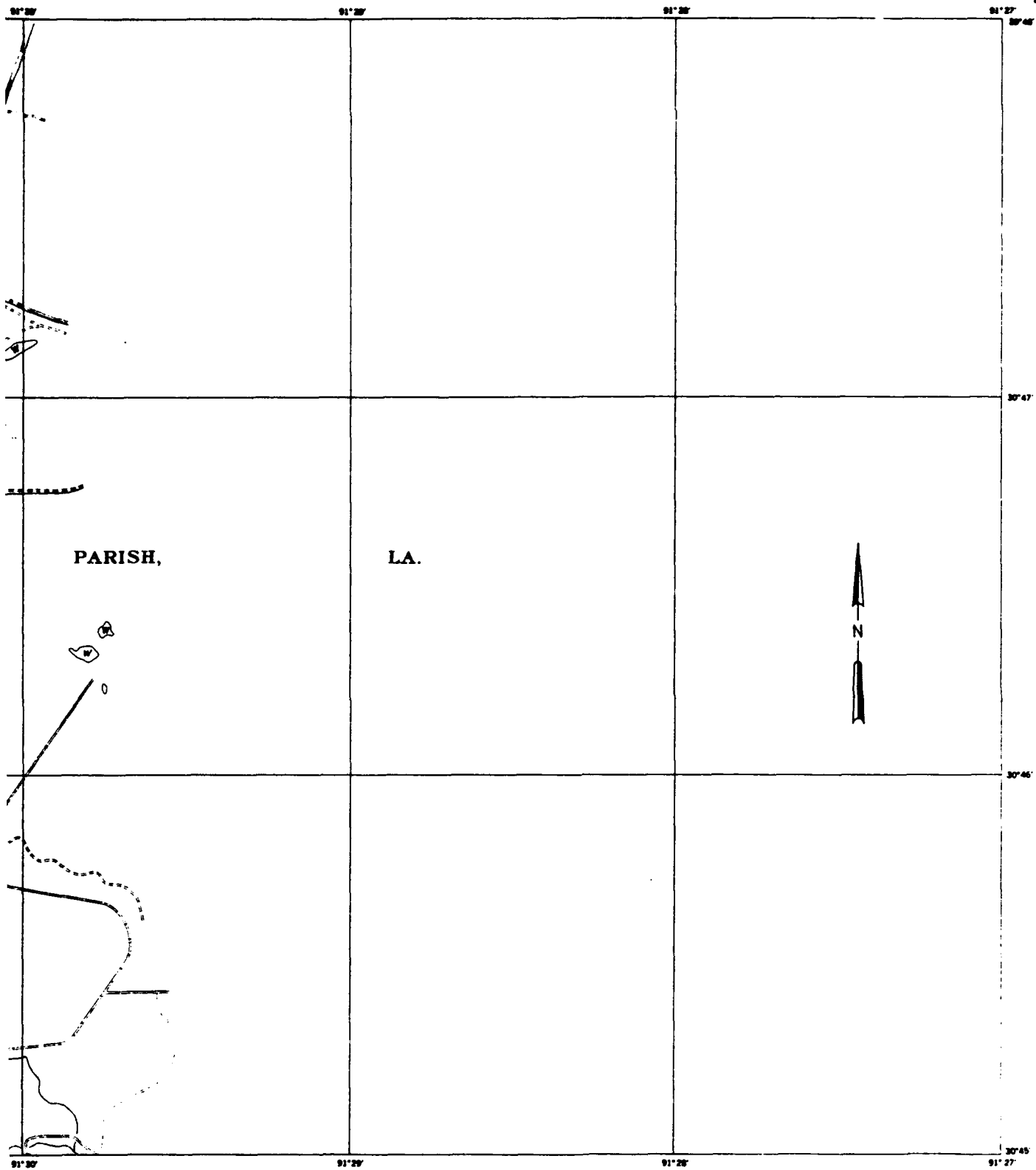


Figure 13: Channel Changes of Mississippi River Shown on Hydrographic Survey, 1983-85, Sheet 14



13-85, Sheet 14. Source: U.S. Army Corps of Engineers, New Orleans District.



-85, Sheet 15. Source: U.S. Army Corps of Engineers, New Orleans District.

Despite its name, historic maps and accounts of the eighteenth century do not give any indication that there was ever a Tunica Indian settlement on Tunica Island. Rather, the name was probably derived from the proximity of other Tunica settlements in the area. Despite the increase of historic settlement in the area during the nineteenth century, the development of the plantation economy, as well as smaller holdings, Tunica Island does not appear to have ever been cultivated.

A smaller mid channel island, appropriately named Little Island, was just downstream from Tunica Island. Its dimensions were 1.5 mi by about 2000 ft. This island's formation was probably the product of the same dynamics that formed Tunica Island. As its chute channel is more narrow than that of Tunica Islands, it was probably found later. Interestingly, Little Island does not appear on any eighteenth century maps of the Mississippi. Therefore, this river island may have been formed sometime in the nineteenth century. With the increased sediment load of the Mississippi River brought on by levee construction and cutoff operations upstream, the chute channel around both Tunica and Little Islands began to silt in. By 1921, Tunica Island had become welded to the east bank and the chute channels ceased to carry the flow of the Mississippi River. That relict channel is still obvious on the landscape however, and has become known as Blind Bayou. Tunica and Little Island's locations have not changed appreciably; instead they have become attached to each other and to the eastern bank of the river as the secondary channel behind it has silted in due to a decreased carrying capacity. In fact, the northern portion of Tunica Island which was incorporated into the portion of the study area receiving intense survey does not appear to have been altered greatly at all.

Channel migration is locally faster where the Mississippi River is reworking the deposits of steep local creek, which introduce gravels and sand to the river. These coarse deposits have been transported downstream as far as below Baton Rouge. Clay plugs and cutoffs tend to have slower rates of migration. The Mississippi River at one time was adjacent to Tunica Hills and has since downstream, leaving floodplain deposits as evidence of its former position. The area west of the town of Fort Adams, south of Fort Adams Road, and east of the modern Mississippi River channel was occupied by the river in the early nineteenth century (MRC 1971), and thus was not exposed until recently.

The hydrology of the Mississippi River system has been greatly modified to reduce flooding. Numerous reservoirs and flood control structures lie upstream along the channel and its tributaries. Upstream of the project area, flow is diverted into the Atchafalaya basin at the Old River Control and Auxiliary structures (mile 313), which were completed in 1963 and 1987, respectively. The Morganza Floodway, which is designed to reduce stage elevations on the lower Mississippi River downstream of the project area and reduce pressures on the Old River Control Project during extreme events. Flow is also diverted into the Pontchartrain basin through the Bonnet Carre' Spillway (mile 128), which was built in the mid-1930s. The combined diversion through these three structures during the flood of

1973 amounted to about 40% of the total flow at Vicksburg, Mississippi (mile 436) (Chin et al. 1975).

ANALYSIS OF AERIAL PHOTOGRAPHS

Objectives and Methods

An analysis of historic aerial photographs was carried out for the east bank of the Mississippi River from Mile 294 to Mile 280. The objectives of the analysis of the historic aerial photographs were: 1) to identify areas of potential cultural resources; 2) to determine changes in land use; and 3) to monitor geomorphic change related to the Mississippi River.

The study incorporated standard photo interpretation and mensuration techniques. Both pocket and mirror stereoscopes were used for viewing stereo models. A 10X lupe with scaled vernier was used for measuring distances on the aerial photographs. Overlays were prepared for one complete set of aerial photographs of the study area. Comparative analysis of multi-date aerial photographs was also completed.

The study included the following procedures:

1. searching archival records for aerial photographs of the study area;
2. reviewing the aerial photographs available on the LSU campus;
3. interpreting and mapping significant features on the available aerial photographs beginning with the earliest photos; and
4. analyzing the results.

Discussion and Observations

The search for historic photographs revealed that a wide variety of aerial photographs of the study area have been acquired by various Federal agencies since 1937. A summary of available aerial photographs, agencies, date, original scale and type of photograph is presented in Table 4.

Several summary observations can be made from a comparative analysis of the 1941, 1952 and 1959 Soil Conservation Service and the 1989/90 Corps of Engineers aerial photographs used in this study (Table 5). Although quantitative measurements of land use change in the study area were not undertaken, it appears that from 1941 to 1952 and from 1952 to 1959 little or no additional acreage was cleared for cultivation and the major shift of land use was from cultivated lands to pasture/fallow to woodland plots. Evidence of this type of shift is especially apparent in the Tunica Bayou area, Brandon and Tunica Island and Little Island area. Woodland plots on the 1941 aerial photographs may also suggest the shift from cultivated plots to woodland plots prior to 1941. Logging activities are evident by the

TABLE 4
AERIAL PHOTO COVERAGE OF TUNICA BEND TO IOWA POINT
(1937 TO 1985)

AGENCY	DATE	ORIGINAL SCALE	TYPE
Tobin	1937	1/18,000	B&W
ASCS (NARA)	1941	1/20,000	B&W
ASCS	1952	1/20,000	B&W
Tobin	1956	1/20,000	B&W
Tobin	1959	1/20,000	B&W
ASCS	1959	1/20,000	B&W
USGS	1963	1/23,955	B&W
Tobin	1965	1/75,600	B&W
ASCS	1967	1/20,000	B&W
COE (Vicksburg)	1973	1/30,000	B&W
NASA (Ames)	1973	1/128,000	C & CIR
COE (Vicksburg)	1973	1/12,800 1/36,000	B&W CIR
NASA (JSC)	1973	1/123,000	C & CIR
NASA (Ames)	1974	1/130,000	CIR
NASA (JSC)	1974	1/118,000 to 1/126,000	CIR
SCS	1975	1/48,000	B&W
NASA (Ames)	1975	1/130,000	B&W & CIR
ASCS	1978	1/40,000	B&W
NASA (Ames)	1978	1/63,360	CIR
NASA (Ames)	1979	1/128,000	CIR
COE (Vicksburg)	1982	1/29,000	CIR
COE (Vicksburg)	1983	1/3,600 1/36,000	B&W B&W
USGS	1983	1/80,000 1/58,000	B&W CIR
NASA (Ames)	1985	1/66,000	CIR
COE (New Orleans)	1989-90	?	B&W

TABLE 5
HISTORIC AERIAL PHOTOGRAPHS ANALYZED

<p>1941 SCS PHOTOS - Index 1941 West Feliciana Parish</p> <p>CQO-2A-21 to 27 CQO-7A-21 to 23 CQO-10A-41 to 54 CQO-12A-53 to 57</p>
<p>1952 SCS PHOTOS - Indices #2 and #3 1952 West Feliciana Parish</p> <p>CQO-5K-141 to 148 (148 missing) CQO-6K-9 to 12 (9 and 10 missing) CQO-6K-18 to 21 CQO-6K-77 to 81 CQL-6K-65 to 66 (66 missing) - Pointe Coupee CQL-6K-105 to 107 - Point Coupee</p>
<p>*1959 SCS PHOTOS - Indices #2 and #3 1959 West Feliciana Parish</p> <p>CQO-4T-8 to 11 (10 and 11 missing) CQO-4T-76 to 85 CQO-4T-132 to 144 (144 missing) CQO-4T-156 to 159 CQO-4T-169 to 171</p>
<p>1990 COE MOSAIC - Greenwood Bend</p> <p>File No. 1-172</p>

* Mississippi River in flood at time of photos.

SCS = Soil Conservation Service

COE = U.S. Army Corps of Engineers

presence of pure stands of conifers, usually dark toned and of a relatively smooth texture. Thinning of these plots is also visible by the open canopy structure and the change from closed canopy to open canopy to closed canopy over time.

Flooding of Blind Bayou by backwaters from the Mississippi River is apparent on the 1952 aerial photographs. The road running generally north-south along the eastern bank of the former chute channel of Tunica Island was flooded in several locations. The largest area of flooding was approximately 0.6 mi south of the Jerusalem Church with spotty flooding in the region 1.0 to 2.0 mi south of the Jerusalem Church.

Possible docking structures visible in 1941 just upriver from Brandon at Como Landing (photo CQO-10A-51) are not present in the 1952 aerial photographs. However, some caution should be used in this interpretation as the feature may be a river tugboat and several barges that may have been anchored for a short period of time.

Erosion and deposition are also apparent along this stretch of the Mississippi River. Erosion along the cut bank of the Mississippi River is quite evident in the Brandon area. A rough estimate is that the bank has retreated 500+ ft from 1941 to 1989/90. Deposition in the vicinity of the confluence of Tunica Bayou and the Mississippi River has shifted the mouth of the Tunica Bayou approximately 0.6 mi downstream between the 1959 and 1989/90. The 1989/90 location is based on COE aerial photographs taken between October 1989 through January 1990.

Interpretation of Aerial Photographs

1941 Aerial Photographs as Baseline of Analysis - The interpretation of the 1941 aerial photographs was undertaken first and was used to establish photo-interpretation keys and as the baseline from which to monitor any changes. The first set of observations were made based solely on the basis of the 1941 aerial photos and focused on river bank erosion and slumping. The aerial photographs used for this interpretation (photo CQO-10A-49 to 51) cover the area from Tunica Bayou to several miles downriver of Como Bayou.

Active slumping along the banks of the Mississippi River from approximately 0.6 mi downriver of the mouth of Tunica Bayou to over 2.0 mi downriver of Como Bayou. Several very large slumps are obvious on CQO-10A-49. One of these slumps includes a stretch of the Mississippi River bank approximately 1500 ft to 2000 ft long and up to 200 ft inland from the Mississippi River. This represents a slump or landslide area of up to 400,000 sq ft.

Photographic keys suggesting the presence of slumping and other evidence of river bank erosion were developed based on airphotos CQO-10A-49 to 51. The general photo interpretation keys are as follows:

1. Light photographic tone of the cliffed river bank, usually indicating disturbance of the vegetative cover.
2. Presence of small islands (toe of the slump), sometimes with trees, immediately adjacent to, but separated from the bank. The slumping often forms an ephemeral bench that usually represents the top of the cliff prior to slumping.
3. Irregular or scalloped planimetric shape of the river bank.

Photo CQO-10A-51 provides an excellent example of what appears to be the progression from an inactively eroding river bank to an actively eroding river bank. The cycle of river bank erosion begins and ends with little or no erosion and exhibits four different stages: 1. Inactively Eroded Bluffs (Initial); 2. Initial Activity (Youth); 3. Maximum Erosion (Mature); and 4. the End Product (Old Age).

The photographic characteristics of these four stages are:

1. Inactively Eroding Bluff - Smoothly curved, dark toned (vegetated) bank.
2. Initial Activity - Smoothly curved, light toned (exposed sediment) bank.
3. Maximum Erosion - Irregular planimetric shape, slumping, and the occurrence of small islands immediately adjacent to the cliff. These islands probably represent the toe of the slump and indicates the presence of an ephemeral bench. The arrangement of light and dark tones (texture) due to vegetation on the slumps.
4. End Product - Scalloped pattern in the planimetric view of the river bank.
The photographic tone of the bank is dark.

Comparative Analysis of 1941, 1952, 1959 and 1989/90 Aerial Photographs - Aerial photographs of the Tunica community area, 1941 aerial photograph (CQO-2A-22) and the 1959 aerial photograph (CQO-4T-42), indicate that there was little, if any, change in the number of visible buildings in that area. In both cases (1941 and 1959) approximately 17 buildings were identified in the area surveyed. Using the COE *Hydrographic Survey 1983-85, #9* based on 1983 aerial photography, only 10 buildings were identified. Five buildings located along the northeast side of the road going southeast from Como Bayou on 1941 aerial photos (CQO-10A-51) do not appear on COE *Hydrographic Survey 1983-85, #9*. These observations suggests that an out migration from the area probably took place between 1959 and 1983.

In a comparison of 1941 (CQO-10A-49 to 51) and 1959 (CQO-4T-141 to 143) aerial photographs, areas southeast of Tunica Bayou and Trudeau Landing that were cultivated in 1941 were not actively being cultivated in 1959. Although not cultivated, some of the areas in 1959 still appeared open but fallow and the rest had reverted to woodlands. The same situation occurred around Como Bayou. In general, it appears that the areas farthest away

from either Tunica Bayou or Como Bayou were the first to be abandoned and allowed to revert to pasture/fallow or woodland. Although the reason for this is not known, one might speculate that abandonment is related to the proximity to water.

During the 1952 (CQO-5K-142) to 1959 (CQO-4T-84) period, there appears to have been some tree thinning taking place in a forested (planted) area approximately two miles south of the Jerusalem Church and east of the road.

Evidence of erosion (active slumping) are apparent along the cut bank of the Mississippi River which includes the project area on the 1941 (CQO-10A-49 to 51) and 1959 (CQO-4T-141 to 143) aerial photographs. Although the mouth of Tunica Bayou shows little evidence of erosion and retreat during the 1941 to 1959 period, the mouth of Como Bayou retreated approximately 150 ft during this 18 year period.

A large multi-tiered slump in 1941 beginning 0.3 mi down river of Tunica Bayou continued to slump between 1941 and 1959. In 1959, the slump scarp is much more evident both with and without stereo and the slump appears to be one-tiered. The multiple slumping that was taking place appears to be completed by 1959 and the scar is much wider and the bench at the base of the cliff more level.

Deposition was not evident from 1941 to 1959, however, from 1959 to 1989-90, a major depositional event took place along the east bank of the Mississippi River at the mouth of Tunica Bayou. Deposition along the outside bend of the Mississippi River upstream from Tunica Bayou apparently started after 1959. Based on 1989/90 Corps of Engineer's aerial photography of Greenwood Bend (File No. 1-172), this deposition resulted in deflecting the mouth of Tunica Bayou approximately 0.6 mi downstream. The extended portion of the Tunica Bayou decreases the channel gradient and should have some effect on the bed load and channel characteristics upstream from the original mouth of the Bayou. The extended channel downstream appears straight on the 1989-90 COE photography.

The planimetric channel morphology of Tunica Bayou downstream of the railroad embankment changed only slightly from 1941 to 1959. However, change in the channel geometry of Tunica Bayou is more evident upstream of the railroad embankment. On Como Bayou, the stream's course downstream from the railroad embankment changed from S-shaped to Z-shaped during the 1941 to 1959 period.

CHAPTER III

PREHISTORIC CULTURE PERIODS AND ETHNOHISTORY OF THE PROJECT AREA

Human beings have occupied the Lower Mississippi Valley for at least the last 12,000 years. Table 6 presents a general chronology of the area as it is currently understood from archeological and historic research.

PALEO-INDIAN PERIOD, PRIOR TO 8000 B.C.

The initial human occupation of Louisiana probably occurred over 10,000 years ago during the late Pleistocene Era. This occupation more than likely consisted of small bands of hunter-gatherers who were nomadic and possibly followed herds of now extinct mega-fauna, such as the mammoth and the giant bison, although these Paleo-Indians hunted a variety of animals. Paleo-Indians are generally poorly represented in Louisiana. Sherwood Gagliano has concluded that there was a strong Paleo-Indian component at the Avery Island Site (16IB23), but his conclusions are not shared by other observers (Gagliano 1964; Neuman 1984).

The artifacts from this period are rare but widespread throughout North America and are especially rare in the Lower Mississippi Valley. The most readily identifiable artifact consists of fluted lithic spear points such as Clovis, Folsom, San Patrice and others (Justice 1987). If one elects to extend the Paleo-Indian era to about 6000 B.C., then sites that include San Patrice points, as well as other lithic artifacts, include such sites as the John Pearce Site (16CD56) in Caddo Parish. No known Paleo-Indian sites have been reported in the vicinity of the project area.

ARCHAIC PERIOD - 8000 B.C. TO 1500 B.C.

The change of climate marking the end of the Pleistocene era led to an eventual change in the flora and fauna of North America, including Louisiana and the Lower Mississippi Valley. This climate change, in turn, contributed to an apparent change in the lifeways of the inhabitants. With the extinction of large megafauna, smaller game and seed and nut gathering became the chief subsistence of prehistoric Indians during the so-called Archaic Period. Sites of *in situ* remains from this period are also rare in Louisiana (Haag 1961). The Archaic sites present in Louisiana and the Lower Mississippi River Valley are recognized to have a greater variety of lithic artifacts, as well as bone tools, which may reflect increasing adaptation to environmental changes brought on by the end of the Pleistocene. Although pottery is not associated with the Archaic Period, steatite vessels and basketry probably served as containers.

TABLE 6
CULTURAL CHRONOLOGY FOR SOUTH LOUISIANA

PERIOD	CULTURE	TIME INTERVAL	PHASES IN REGION OF PROJECT AREA
Historic	Various Cultures	PRESENT A.D. 1700	Houma, Tunica and Natchez Tribes
Mississippi	Mississippian Plaquemine	A.D. 1600	Dela Natchezan
		A.D. 1500	Medora
		A.D. 1200	Barataria
Coles Creek	Transitional Coles Creek Coles Creek	A.D. 1000	Truly
		A.D. 900	Bayou Ramos
		A.D. 850	
		A.D. 700	Bayou Cutler
Baytown	Troyville-like	A.D. 400	Whitchall
Marksville	Marksville	A.D. 200	Gunboat Landing
		A.D. 1	Magnolia & Mandalay
Tchula	Tchefuncte	250 B.C.	Smithfield
		500 B.C.	LaBranche
			Beau Mire
			Pontchartrain

TABLE 6 (CONTINUED)
CULTURAL CHRONOLOGY FOR SOUTH LOUISIANA

PERIOD	CULTURE	TIME INTERVAL	PHASES IN REGION OF PROJECT AREA
Poverty Point	Poverty Point	500 B.C. 1000 B.C. 1500 B.C.	Garcia Bayou Jasmine
Late Archaic	Archaic	3000 B.C.	Pearl River
Middle Archaic			Monte Sano Amite River
Early Archaic			St. Helena
Late Paleo			Jones Creek
Early Paleo	Paleo-Indian	8000 B.C. 10,000 B.C.	?

Also, the appearance of the *atlatl*, or dart thrower, as a tool for launching projectiles is widely recognized as diagnostic artifact of the Archaic Period (Neuman 1984). In addition to the dart points themselves, objects known as boatstones or bannerstones, thought to be weights added to increase the force of the dart, are also diagnostic of the Archaic Period (Neuman 1984:79).

While most Archaic sites in Louisiana are found in upland areas, away from alluvial valleys, this may be a product of alluvial deposition burying sites from this period rather than an indication that such areas were avoided during the Archaic (Haag 1961). A good example of this probability is 16CO21, a site in Concordia Parish, the general region of the current project area. Two lithic projectile points, reportedly classified as Hale and Kent types, of gray mottled and yellow tan chert respectively, were found on the top bankline of an excavated outflow channel associated with the Old River Control Structure (DOA site files). Such a site in the alluvial plain of the Mississippi River indicates a presence in the study area during the Archaic. It also indicates the difficulty of finding such sites because they are covered by several feet of alluvium or have been removed from an *in situ* deposit by possible events of erosion and redeposition that could have occurred in the thousands of years since the Archaic Period.

Until recently, most archeologists did not consider mound construction a trait associated with Archaic Period sites. Current research, however, has created the need for a reappraisal. Research at the Hedgepeth Mound Site (16LI7), in north central Louisiana, has provided artifactual and radiocarbon data that seems to indicate an Archaic Period construction (Saunders 1991; 1992). Research at other sites such as the Hornsby Mound (16SH21), the Monte Sano Mounds (16EBR17) and the LSU Campus Mounds (16EBR6) have also provided evidence suggestive of Archaic Period mound construction (Jones and Shuman 1986, 1988).

POVERTY POINT PERIOD - 1500 B.C. TO 800 B.C.

Out of the Archaic tradition, several new cultural developments occurred in several regions of North America. Domesticated cultigens, pottery making, and prolific mound building are recognized as characteristics that indicate increased populations, social complexity beyond bands of hunter and gatherers, and the introductions of new technologies. In Louisiana and the Lower Mississippi Valley, the Poverty Point Period from around 1500 to 800 B.C. saw one of the most dramatic transitions from the Archaic. The Poverty Point Site itself, unique for its large mounds, concentric patterned earthen ridges, huge amount of baked clay objects, and apparent extensive trade network, is the type site for this culture (Webb 1982; Neuman 1984). While dart points and boatstones are associated with Poverty Point Period sites, suggesting a continuation of Archaic subsistence techniques, there is increasing evidence that some horticulture may have taken place at the Poverty Point Site (Webb 1982).

No verifiable sites dating from the Poverty Point Period are to be found in the current project area. However, Dr. Fred B. Kniffen's allusion to "74 clay squeezes" at the Angola Gate Mound (16WF31), may be an indication of a Poverty Point Period occupation in the area. Unfortunately, the mound and associated site have now been completely destroyed by construction at Angola State Prison (Jones and Shuman 1986).

TCHULA PERIOD - 500 B.C. TO A.D. 200

Following the decline of the Poverty Point Period, the archeological record for Louisiana and the Lower Mississippi Valley is less well defined (Neuman 1984). In south Louisiana, the succeeding culture is the Tchefuncte, which is generally regarded as a less complex period than the preceding Poverty Point. Tchefuncte, part of the Tchula Period, did exhibit one generally recognized technological achievement over the Poverty Point culture: the production and use of pottery (Ford and Quimby 1945). Originally associated with the coastal regions of Louisiana, it has been ascertained that this culture extended northward beyond coastal regions (Neuman 1984; Toth 1988:19-21.) Usually recognized by their ceramics, Tchefuncte sites are relatively few in number, and composed of small hunting camps that suggest a partially nomadic existence. Human remains and seed evidence, however, suggest that this period also had the rudiments of agriculture, or perhaps more aptly, horticulture (Neuman 1984; Weinstein and Rivet 1978). No Tchula Period sites are known to exist in the environs of the current project area.

MARKSVILLE PERIOD - 100 B.C. TO A.D. 400

The Marksville culture, with its complex type site located on the eastern edge of the Avoyelles Prairie about 20 mi west of the project area, is interpreted as a southern manifestation of the Hopewell culture. Characteristic pottery types, conical burial mounds, and elaborate earthworks all point to some sort of connection with the Hopewell in the Ohio River Valley. While WPA-sponsored excavations of the Marksville Site have unfortunately gone unpublished, a synthesis of data for this period has been performed by Alan Toth (Toth 1974). He and previous investigators have long noted that the characteristic conical mounds of the Marksville Period were once in far greater number than they are today and that the sample available for archeological study is only a small fraction of what was once available. Additionally, in an overview of the Marksville culture in the Lower Mississippi Valley, Toth laments the focus upon the mounds and the burial practices of this era. He feels that additional data on subsistence and settlement patterns would increase our understanding of the Marksville Period (Toth 1988).

Monk's Mound (16PC5) across the Mississippi River is in the general vicinity of the project area approximately three-fourths of a mile south of Raccourci Old River and is located on the backside of the natural levee of what was once the main channel of the

Mississippi River. Also, in the general area, the Noland Mound (16WF7), suggests a Marksville Period occupation on the east side of the Mississippi (Jones and Shuman 1986). Toth has relegated the Monk's Mound Site to the Smithfield Phase of the Marksville Period, but he was unaware of the Noland Mound, about which too little is known to securely assign to a particular phase. Of Monk's Mound, Toth notes: "The little evidence there is from Monks points to a very exciting site with tremendous potential for early Marksville research. The mound must be preserved, as it may constitute the only surviving example of Smithfield phase mortuary activity" (Toth 1988:206). The same may be said of the Noland Mound and both await further investigation.

TROYVILLE-BAYTOWN PERIOD - A.D. 300 TO A.D. 700

A loosely labelled period termed Troyville or Baytown was originally described as a transition period between Marksville and Coles Creek. It was a time of gradual transition from the conical burial mounds of Marksville times to the platform mounds represented by the Coles Creek Period. Ceramic types associated with this period are poorly defined when compared to the earlier and later periods (see Gibson [ed.] 1982) and there is a large range of Baytown occupations in the region. According to Gibson, however, the "main thread of commonality lies in a single class of pottery - red painted ware" (Gibson 1982:50).

The Troyville Site originally had at least nine mounds and an earthen embankment that restricted access to most of the mounds within an area made further inaccessible by the natural boundaries of the Little and Black Rivers. James A. Ford (1951) noted differences in the ceramics at the Troyville site from those associated with the Marksville Period and those of the later Coles Creek Period. Later analysts, however, have proposed that the Troyville Period, expanded to include Baytown ceramics from the Yazoo and St. Francis River basins, should be considered a somewhat less than distinctive period that has many continuities stretching into the Coles Creek Period (Gibson 1982). Platform mound building, as opposed to the typically conical mound building of Marksville, was apparently first practiced in the Troyville Period, although mound construction apparently is not as well defined for the Troyville Period as for the succeeding Coles Creek Period (Belmont 1982). Sites dated to this culture period are rare in the vicinity of the project area, although Brain reported a small Baytown component at the Trudeau Landing Site (16WF25) (Brain 1988b).

COLES CREEK PERIOD - A.D. 700 TO A.D. 1200

The Coles Creek Period is one of the most widespread and clearly defined archeological horizons in Louisiana. It is recognized by several diagnostic pottery types and the construction of the pyramidal platform mound. The type site of the Coles Creek Period, the Greenhouse Site (16AV2), is on the floodplain just east of the Avoyelles Prairie

approximately 18 mi east of the current project area. This site, partially excavated by WPA-LSU archeological work in 1939, was reported by James A. Ford (1951).

In addition to the Greenhouse Site, other mound sites possibly associated with the Coles Creek Period, dot the floodplain landscape for the twenty miles between the Avoyelles Prairie and the Mississippi River. Before modern levee construction, this portion of Louisiana was frequently inundated by overflow from the Red River (Ford 1951). However, the existence of sites such as the Greenhouse Site (16AV2), Lake St. Agnes Site (16AV26), Lower Long Lake (16AV10), and Long Lake (16AV33), among others would seem to indicate that this same floodplain may have been less susceptible to flooding at some point in prehistoric times and therefore habitable. Indeed, it is a point of curiosity that the Greenhouse Site, originally consisting of seven mounds, was built at the very foot of the Avoyelles Prairie escarpment, which is 30 ft or more above the floodplain, instead of upon the escarpment itself (Ford 1951; Jones and Shuman 1989).

In addition to mound sites on the west bank of the Mississippi in the general region of the project area, there are other sites that show a definite Coles Creek occupation on the east bank of the Mississippi River. The Smith Creek Site in Mississippi was investigated by Ford in the 1930s and provided data to define diagnostic traits for this period (Ford 1936). Brain's excavations at the Trudeau Landing Site (16WF25) and other sites near the project area also revealed a Coles Creek presence. The second prehistoric occupation at the site, postdating an apparently short lived Baytown culture occupation, was a manifestation of the Coles Creek culture. Distribution of surface and excavated artifacts suggested a small village located at the base of the loessal bluff and extended somewhat out toward the river (Brain 1988b).

MISSISSIPPI PERIOD - A.D. 1200 TO A.D. 1700

Concomitantly and following the Coles Creek Period, several cultural developments occurred in various portions of Louisiana. The Caddo culture, which is often associated with northwestern Louisiana and the Red River, enjoyed something of a florescence and was influenced by a number of surrounding cultures, and perhaps influenced by others from as far away as Mesoamerica (Neuman 1984:218). Sometime after A.D. 1000, the Plaquemine phenomenon, originally defined by the Medora Site (16WBR1), continued the mound building tradition; probably relied more on maize agriculture; and exhibited specific pottery types such as Plaquemine Brushed, L'Eau Noire Incised, and Harrison Bayou Incised (Quimby 1951; Phillips 1970).

The Plaquemine culture is not the distinct entity it was once thought to be, however. Weinstein (1985) has pointed out that a great many ceramics collections from sites throughout the Lower Mississippi Valley contain putative artifacts from both the Coles Creek and Plaquemine Periods. The Plaquemine culture developed as Mississippian cultural developments spread southward from their hearth in the Central Mississippi Valley.

However, this Mississippian intrusion could have come to the Lower Mississippi Valley from the east via the Gulf Coast. By whatever route, the cultural influences encountered a very conservative culture base that selected and modified Mississippian ideas rather than wholesale adoption. Eventually, more distinctly pyramidal mounds, some shell tempered ceramics, distinct ceramic decorations, and changes in house types marked the florescence of the Plaquemine culture in the Lower Mississippi Valley (Brown 1985; Weinstein 1985).

Several Plaquemine sites are in the general region of the current project area, sites such as the Lake St. Agnes Mound (16AV26) (Toth 1979) and the Nick Mound (16AV22), a Plaquemine Period mound site on the Avoyelles Prairie (Jones and Shuman 1989), attest to possible occupation of the study area during this period. Also, pottery types such as Maddox Engraved, found at such sites as the Baptiste Site (16AV25) and the Prairie Lake Mound (16CO28) (Moore 1911), suggest a Caddoan presence, or at least a Caddoan influence during the late prehistory of the study area (Philips 1970:107-108). Also, the Lee or Solitude Mound (16WF27) is located on Bayou Sara five miles east of the project area. Investigations conducted at this site, although not involving excavation of *in situ* materials, suggested a Plaquemine occupation (Jones and Shuman 1986).

PROTO-HISTORIC AND ETHNOHISTORIC PERIOD

The proto-historic stage prepared for the entry of the Lower Mississippi Valley into the historical record and indicated a fairly extensive aboriginal occupation, although probably less intense than during the Coles Creek Period. Mound building, while still extant among some groups, was generally on the decline. Maize agriculture, among other cultigens, provided a subsistence base that was augmented by continued hunting and gathering. Some groups were organized into large and populous chiefdoms, with a fair degree of sedentism, while other groups were smaller, more simply organized, and more likely to be nomadic or semi-nomadic.

One of the first recorded European appearances in the Lower Mississippi Valley was Hernando De Soto's *entrada* in the Southeast. While there is little doubt his expedition did encounter the Mississippi River, there is great disagreement as to where De Soto crossed the river during his wanderings and raids. When De Soto died, his body was disposed of in the river, although the same scholarly disagreements exist as to where his demise took place. The chroniclers of the expedition, however, reported large Indian communities and extensive fields of maize and other crops in many portions of the country through which they traveled. Later European explorers, mainly the French, arrived over 100 years later and found that population densities noted by De Soto's men no longer applied.

Pierre Lemoyne, Sieur d'Iberville, was among the first Europeans to provide a detailed description of an aboriginal settlement in the Lower Mississippi Valley.

Encountering the Houma during his 1699 voyage of exploration in the area of what is now Angola State Prison, Iberville writes:

... This village is located on a hill, on which there are 140 huts. There are possibly 350 men at most and many children. All the huts are on the slope of the hill, in two rows in certain places and in a circle. In the middle, there is a village square 200 yards wide kept in good order. The corn fields are in little valleys and on hills in the vicinity. This whole region is chiefly hills of fairly good black soil. There are no rocks whatsoever; I have not yet seen any at all since I left the sea. The village is 2½ leagues north of the river. The woods are hardwood trees, mixed with all sorts of oaks, and particularly a great many canes in the bottoms. I saw no fruit tree there. They gave me nuts of two kinds: one kind being hard nuts like the ones of Canada, the other kind small ones shaped like olives and no bigger. So far they have cultivated nothing except some melons, but have sowed tobacco (Iberville 1981:69).

Guillame De L'Isle's 1702 map of the Mississippi River (Figure 15) clearly showed the location of the Houma village. This map almost certainly included information obtained during Iberville's voyage.

The Tunica tribe descended from Indians who were originally settled in northern Mississippi. Over the years, the Tunica moved, or were pushed, southward in a gradual migration. In 1541, during exploration of the lower Mississippi valley, Hernando De Soto's expedition probably encountered the precedents of the Tunica tribe in northwestern Mississippi at Quizquiz. Between this initial and decidedly unpleasant contact and the French entry into the Lower Mississippi River in the late seventeenth century, the Tunica entered the historic record. The Tunica had moved from their ancestral homeland to the lower Yazoo River for reasons unknown. By the early 1700s the Tunica had settled south and east of the confluence of the Red and Mississippi rivers and had joined the Houma in a general area they were to inhabit for the rest of the eighteenth century. The Houma were eventually forced to leave the area they had inhabited and move to other parts of Louisiana. A French missionary, Father Antoine Davion, settled among the Tunica and established a mission to convert the Indians to Christianity. This contact predisposed the Tunica toward the French and the Tunica used this contact to establish trade and acquire substantial amounts of European-manufactured goods (Brain 1988b:16-44).

By 1731, the Tunica moved into the Tunica hills near Tunica Bayou in what would become West Feliciana Parish. The location of this and other Tunica villages recorded on various historic maps from the mid and late eighteenth century (Brain 1988b:16-44). One of the most telling maps is the Ross map of 1765 which depicts several settlements of the Tunica in the general region (Figure 16). In 1764, the Tunica participated in the ambush of the Loftus expedition at Davion's Rock, now Ft. Adams, on the Mississippi River which was traveling upstream to establish British control of the Mississippi River. The Tunica fled

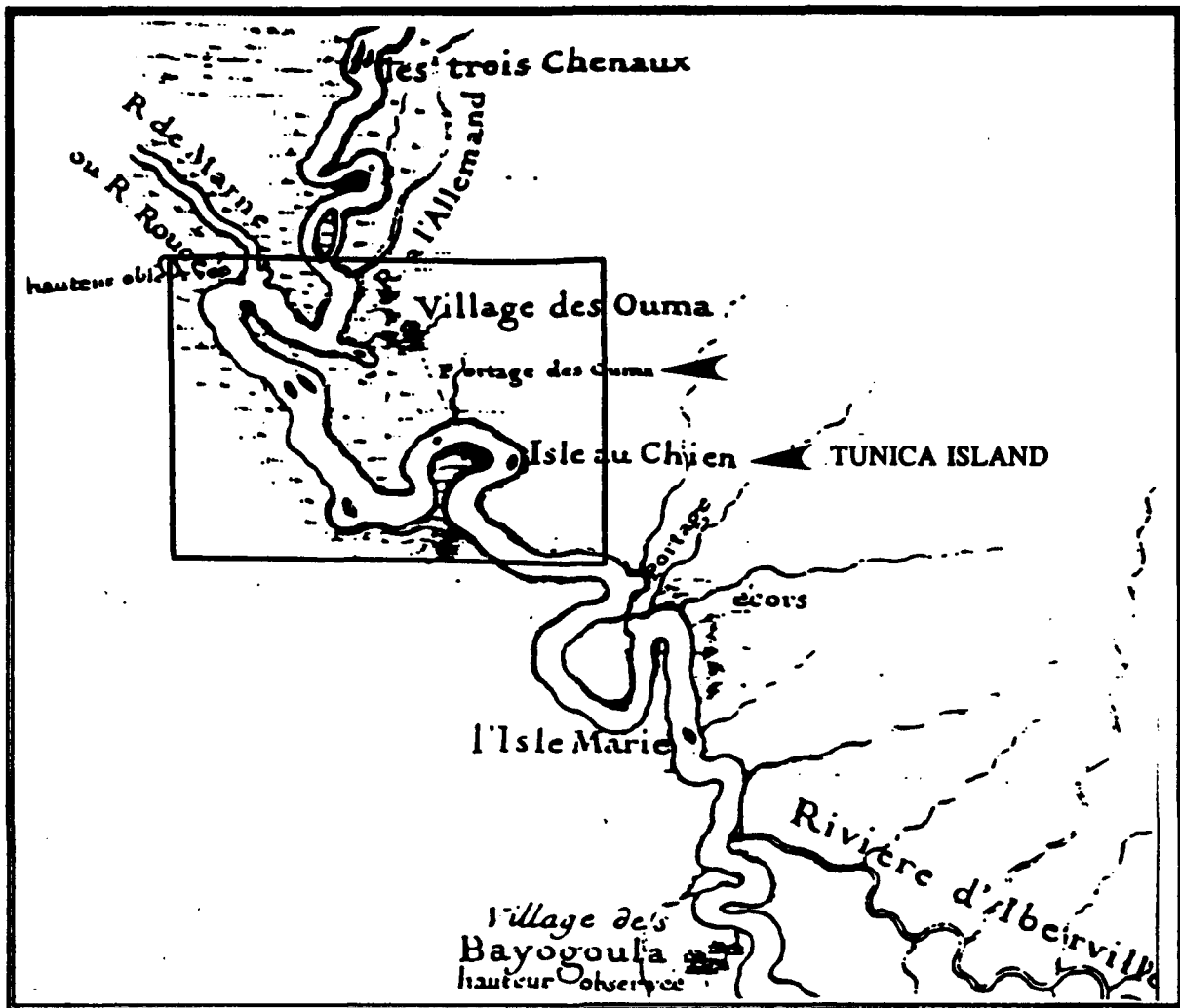


Figure 15: Detail of chart of Mississippi River done by Guillaume De L'Isle, 1702. Source: Cartographic Information Center, LSU.



Figure 16

Figure 16: Detail of Ross Map published in 1775 based on 1765 survey and earlier French maps. Round Island is another name for Tunica Island. James Village is perhaps a reference to Tunica Village.

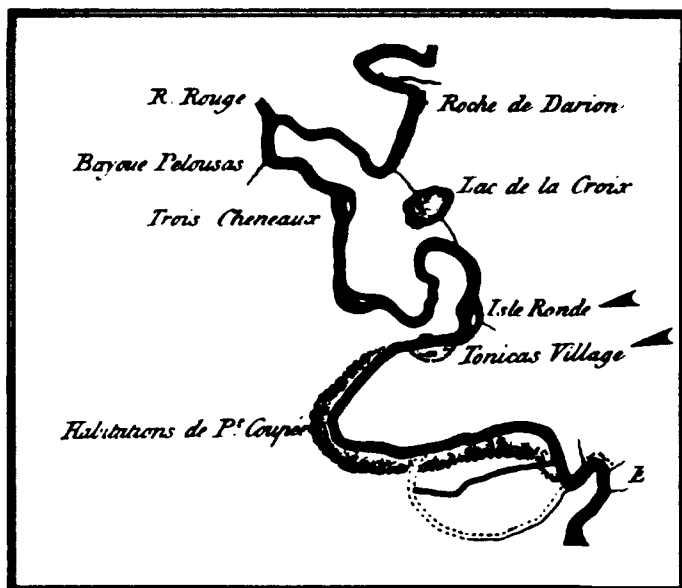


Figure 17

Figure 17: Detail of Pittman's map of 1770 based on 1765 survey. Isle Ronde is Tunica Island.

the area for Mobile to escape retribution, but were eventually allowed to move back into their old region. Pittman's map of the Mississippi River, published in the early 1770's shows the Tunica located on Iowa Point south of Round (Tunica) Island in a portion of the Mississippi River within the project area (Figure 17). Two maps attributed to Elias Durnford, the Surveyor General of British West Florida, shows the Tunica located in the same general region. Figure 18 gives a very general location of the Tunica village, while Figure 19 shows a little more detail of the village location. Both Durnford maps are dated to 1771. Not surprisingly, this location was just across the river from the Tunica's French allies at the settlement of Pointe Coupee. The widely reproduced Ross map of the Mississippi River, which dates to 1775, (Figure 16) shows several Indian landmarks in the vicinity of the project area. The most enigmatic is "James Village" about which little is known. It is in the same general location as the Tunica Village on the Pittman and Durnford maps, but that name appears on no other map.

By the late 1700s, the area settled by the Tunica had experienced increasing European encroachment. The Tunica reacted to this pressure by migrating across the river, with the official blessing of Spanish colonial policy, to the area of Marksville, Louisiana. Today their descendants remain in the Marksville area and are recognized as a tribal entity.

During the three decades of residence just south of Tunica Bayou and east of the Mississippi River, the Tunica tribe occupied a site that has been named the Trudeau Site (16WF25), after an early European landowner. Archeological excavations have since determined that the location served as both a cemetery and principal site of occupation (Brain 1988b:65).

In addition to the Tunica, the Gauld Map of 1778 (Figure 20) shows a Pascagoula village just downstream from the Tunica village at the Trudeau Landing Site. This village would have likely been in a portion of the project area, possibly near Como Plantation, although the detail of the Gauld Map makes relocation on present day topographic maps problematical. The Pascagoula had been living on the Gulf Coast near present day Bay St. Louis, Mississippi during the French Colonial Period. According to Du Pratz (1975:18) the name *Pascagoula* meant "nation of bread." With the end of the French and Indian War, the alliance the Pascagoula and other tribes enjoyed with the French came to an end. British and Spanish colonial policies caused them and other tribes to move. These dislocations in turn caused disputes among other newly displaced tribes over hunting grounds, trade, slaves, and women (Kniffen et al. 1987:83-88). According to Swanton: "In 1764 they [the Pascagoula] crossed the Mississippi and settled for a short time on the great stream itself not far from the mouth of Red River" (Swanton 1979:171). With the Louisiana Purchase in 1804, the Pascagoula and other tribes moved once again into the Big Thicket area of east Texas which was then Spanish territory. The entire Pascagoula nation was never very large. Iberville reported that the Pascagoula had about 130 warriors in 1699 when he first encountered them, and an 1829 report estimated a population of only 111 people (Swanton 1979:171).

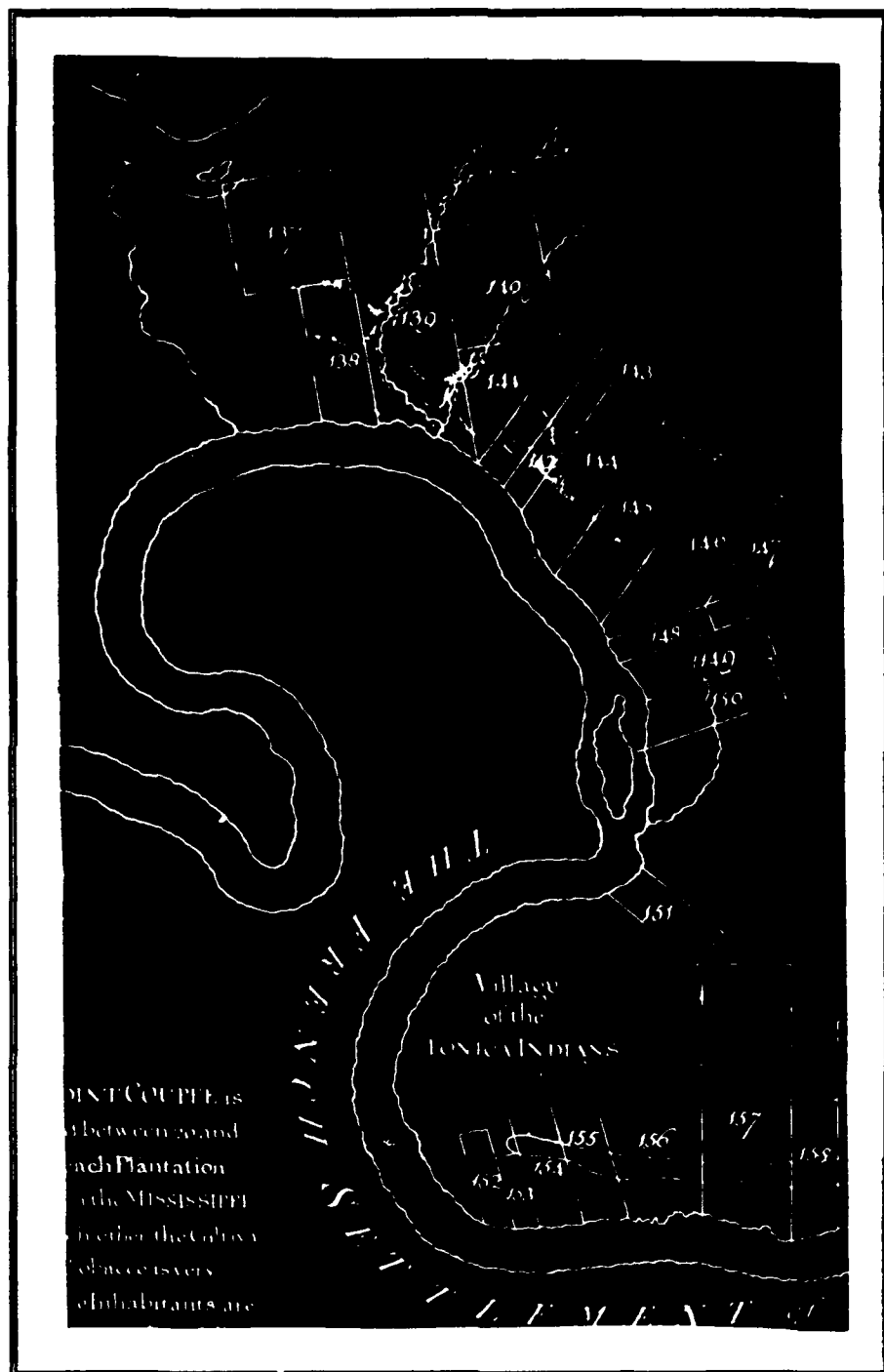


Figure 18: Detail of Durnford map, 1771, of Mississippi River.
Source: Hill Memorial Library, LSU.

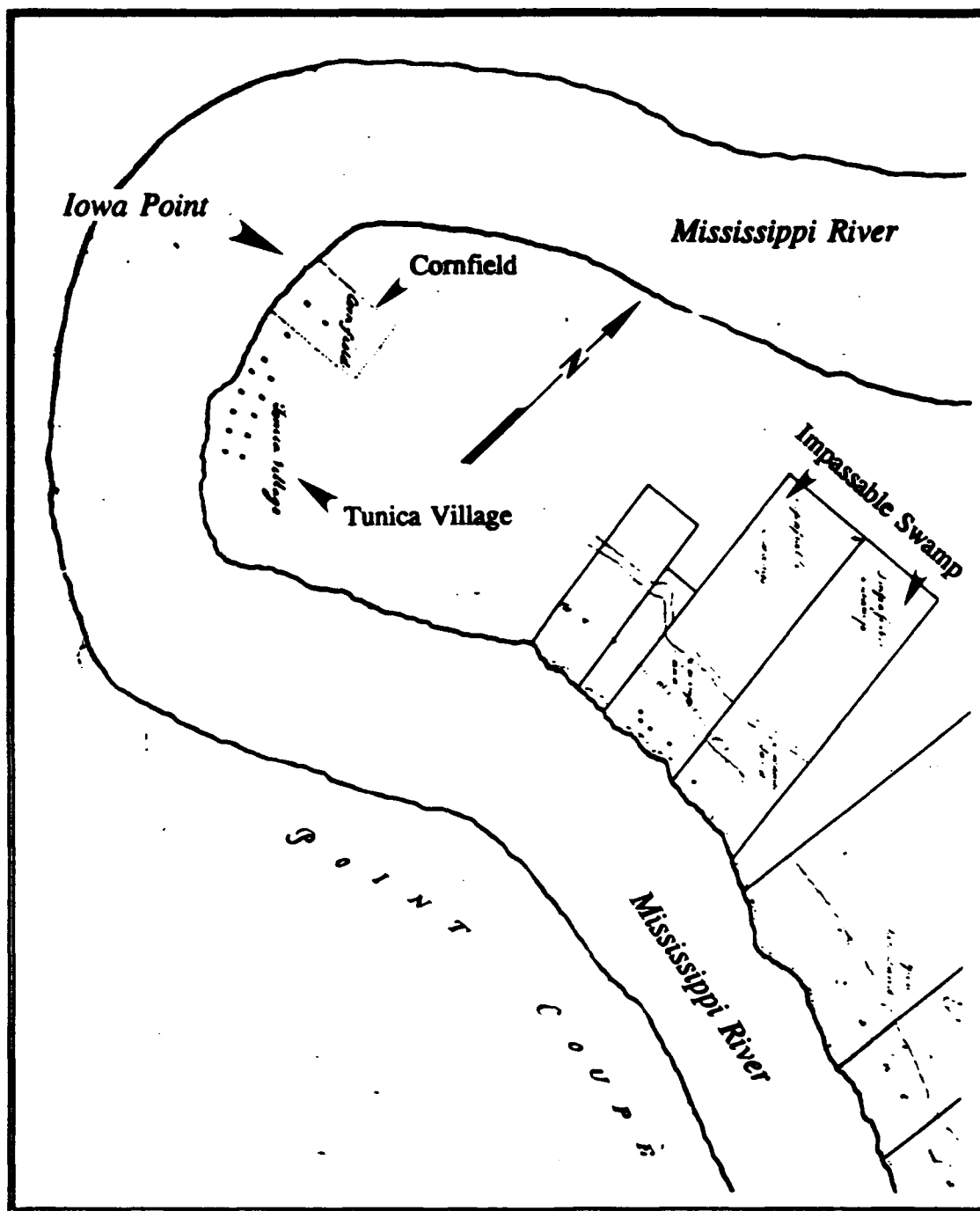


Figure 19: Detail of 1770 Durnford map showing location of Tunica Village at Iowa Point.

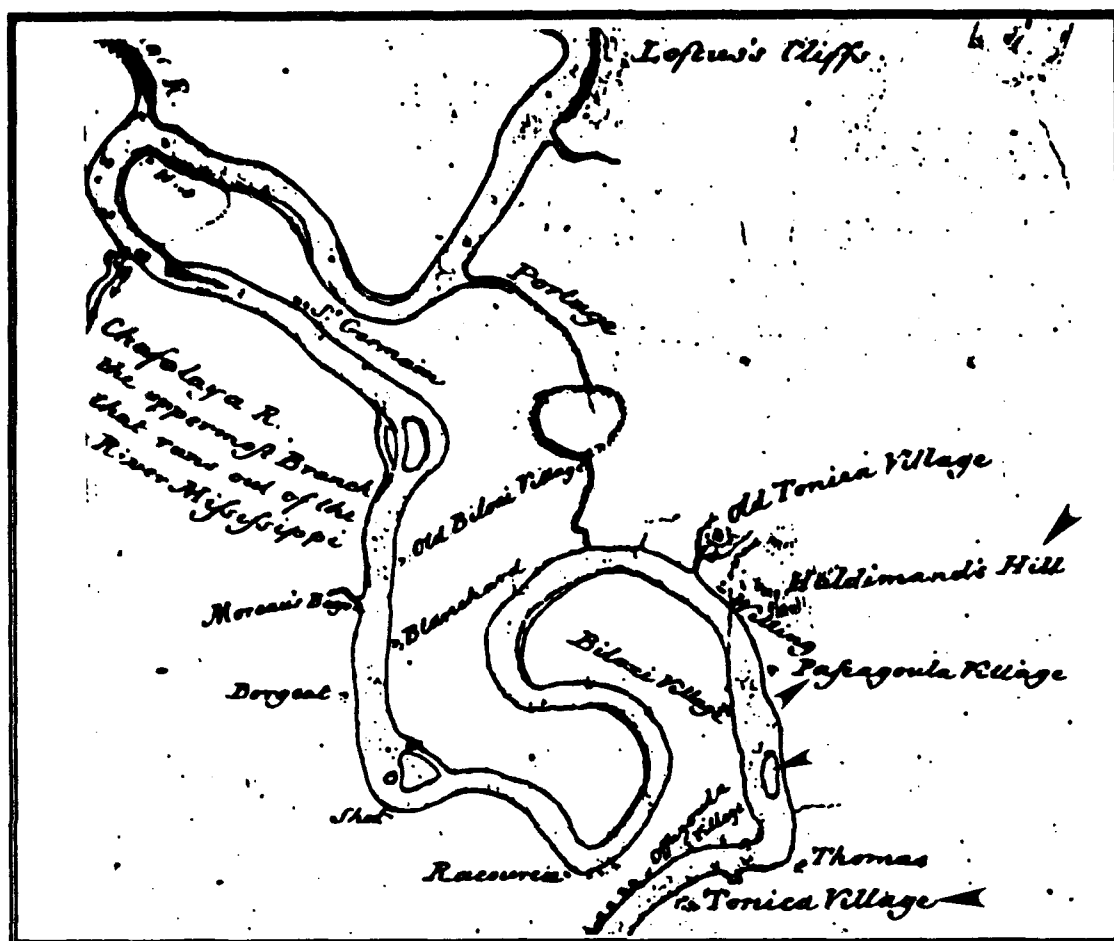


Figure 20: Detail of Gauld map of 1778. Source: Cartographic Information Center, LSU.

The Gauld map also shows a Ofogoula village directly across the Mississippi River from the southern portion of the project area. These people had also been displaced by the intertribal pressures brought on by the French and Indian War. They moved to area of the Lower Mississippi Valley from southern Ohio to escape the English and their aboriginal allies, the Chickasaw and Creek. In 1764, the Ofogoula participated in the attack on the British convoy commanded by Major Loftus at Davion's Rock or Loftus' Cliffs, as they became known for a while, near present day Ft. Adams, Mississippi. The Ofogoula were probably in the general area shown by Gauld before joining the Tunica in the area of present day Marksville in the early nineteenth century. Long associated with the Tunica, the Ofogoula must have relied on their more numerous and more successful neighbors a great deal. In 1700, it was observed that the Ofogoula settlement consisted of only 12 cabins. A 1758 estimate placed the number of Ofogoula warriors at a dozen (Swanton 1979:165-66).

By the early nineteenth century, around the time of the Louisiana Purchase, the aboriginal presence in the region surrounding the project area had become negligible. In the eighteenth century, there had been collaboration between the various colonial powers and the aborigines, but the Louisiana Purchase made such alliances obsolete. The Americans erased any considerations that the French, English, or Spanish may have given the various tribes and they were pressured to move on. The European settlement that had begun in the area during the 1700s continued and became more extensive with Louisiana's entry into the United States in 1812.

CHAPTER IV
A BRIEF HISTORY OF WEST FELICIANA PARISH
AND PARCELS OF LAND ALONG THE EASTERN BANK OF
THE MISSISSIPPI IN THE VICINITY OF THE PROJECT AREA

COLONIAL HISTORY

The first European explorers to pass through the area were probably Hernando de Soto's men on their way to the Gulf of Mexico in 1542. This early Spanish claim to Louisiana was tenuous, as no Spanish settlers moved in to maintain the claim. The French proved to be more successful in establishing a claim to Louisiana. Travelling down the Mississippi River in 1682, French explorer Robert Cavelier, Sieur de la Salle, claimed Louisiana and named it for the French King, Louis XIV. In 1699, the brothers Pierre le Moyne, Sieur de Iberville, and Jean Baptiste le Moyne, Sieur de Bienville, explored part of what would become the Feliciana Parishes and visited the Houma tribe (Butler 1924:90-95; Iberville 1981:67-70).

In order to maintain their claim to Louisiana, the French promoted settlement. In 1712, Louis XIV contracted with Antoine Crozat, and in 1717 with John Law, to establish trade and colonize Louisiana, but only sparse settlement resulted (Butler 1924:90-93). The French managed to establish "Fort St. Reyne aux Tonicas" (Fort St. Reine) in 1729 near the present-day location of St. Francisville, but it lasted only for a brief period (Hamilton 1983:1). In 1738, French Capuchin friars established a chapel across the Mississippi River in what is now Pointe Coupee Parish, but regular flooding forced them to place their cemetery across the river near the site of Fort St. Reine (Arthur 1935:19).

With the Treaty of Fontainebleau in 1762, Louisiana passed from French to Spanish control. Under the jurisdiction of the Bishop of Santiago de Cuba, Spanish Capuchin friars moved to the area that is now St. Francisville in West Feliciana Parish and built a monastery and a cemetery. While the Capuchin had a brief tenure in the area, the name St. Francisville survived from their occupation (Butler 1924:92-93).

With the Treaty of Paris in 1763, Spain relinquished to Great Britain the territory of West Florida: land north of Bayou Manchac and Lake Maurepas, east of the Mississippi River, and west of the Apalachicola River. The British immediately began efforts to settle the area by conferring land grants to British officers and soldiers. The amounts of land varied according to military rank, from 5,000 ac for field officers, to 300 ac for privates (Arthur 1935:12-15). Henry Fairchild, Herbert de Munster, and General Frederick Haldimand, among others, received grants located in the area between Tunica Bayou and Iowa Bend (Brain 1988b:39-41).

In 1779, Spain declared war against Great Britain, which was engaged in a military struggle with the rebellious thirteen colonies. Due to its strategic location between Natchez and New Orleans, Spain reclaimed West Florida, including Feliciana (Butler 1924:92-94). Upon recapturing the area, Don Bernardo de Galvez renamed part of the area Feliciana for his Creole wife. In order to maintain its control of the area, the Spanish encouraged settlement by giving out large land grants to loyal settlers (Hamilton 1983:1). For example, the Spanish government granted the vacant Haldimand Tract to Carlos Trudeau, a land surveyor, whose widow sold the land a year later to Oliver Pollock (Brain 1988b:41).

In 1800, the Treaty of San Ildefonso returned most of Louisiana to France, but shortly after the actual restoration in 1803, France sold Louisiana to the United States. West Florida, including Feliciana, was disputed by the United States and Great Britain, but held by Spain. In 1810, residents of West Florida, including leaders John Rhea, John H. Johnson, and William Barrow, rebelled against Spain, established the Republic of West Florida, adopted a constitution, and elected Fulwar Skipwith governor. St. Francisville was initially made the capital, but it was later moved to Baton Rouge. Later that same year, the United States claimed West Florida and took possession of Feliciana, which it held illegally until the Adams-Onís Treaty in 1819 gave all of Florida to the United States (Butler 1924:94-99; Padgett 1938:1-3).

EARLY AMERICAN HISTORY

Louisiana was admitted to the Union in 1812, although the Florida parishes (those that were the part of West Florida west of the Pearl River) were not added to the state for several months. The seat of Feliciana Parish was originally St. Francisville, but was later moved to Jackson. In 1824, the parish was divided into two parishes, East Feliciana and West Feliciana, and St. Francisville became the governmental seat for West Feliciana (Hamilton 1983:9, 13; Bersuder 1952:3-4; Miller 1987:2).

The town of Bayou Sara developed adjacent to the Mississippi River along the bayou of the same name, just below the bluffs where the Capuchins had established a monastery and where a British surveyor had marked the long abandoned Fort St. Reine in 1765. Originally established as a trading post by John H. Mills and Christopher Strong Stewart in 1790, Bayou Sara flourished as a port town. The town once served as the largest port between Memphis and New Orleans. Several fires during the first half of the nineteenth century only temporarily set back growth and trade in Bayou Sara, but frequent flooding also plagued the town. Eventually, St. Francisville eclipsed Bayou Sara as the center of commerce and trade and the town of Bayou Sara was unincorporated in 1926 (Hamilton 1983:7-8; Louisiana Works Projects Administration 1941:464).

St. Francisville was established along a bluff above Bayou Sara and the Mississippi River. John H. Johnson laid out the town in the early 1800s on John Mills' 1787 Spanish

land grant and lots were first sold in 1807. The community erected a hotel two years later which, in 1810, served as the legislative chamber of the Republic of West Florida. By 1811, the town boasted its own newspaper and even sent a war correspondent to cover the War of 1812. St. Francisville had no regular mail service, however, and national and international news usually arrived on passing boats via other newspapers and travelers.

In 1828, a St. Francisville to Woodville Mississippi railroad was proposed, but was not built for another fourteen years. The railroad provided planters in the city of Woodville, Mississippi with access to the Mississippi River for shipping cotton (Reeves 1967:vii; Bersuder 1952:7-8).

The community of Tunica was located near the Mississippi River north of St. Francisville and Bayou Sara. In 1941, the community was made up of a cluster of houses and had a population of twenty-five (Louisiana Works Projects Administration 1941:523).

THE CIVIL WAR IN WEST FELICIANA PARISH

West Feliciana Parish, having important access to the Mississippi River and one of the few railroads in the South, faced many difficulties during the Civil War. Shipping was curtailed, manpower reduced, and one of the critical battles for control of the Mississippi River was fought just across the parish line. Thompson Creek served as the southern boundary for West Feliciana Parish. Just across Thompson Creek, at a sharp bend in the river, the town of Port Hudson served as a shipping terminus for a railroad that linked the Mississippi River with Clinton, in East Feliciana Parish. The Confederate Army recognized the importance of controlling this area, and constructed a bastion at Port Hudson in August 1862 (Hewitt 1987:x-xi; Spedale 1986:ix-xii). The Union Army sought to control the Mississippi River, and gained control of New Orleans and Baton Rouge early in the war. If the Union Army controlled Port Hudson and Vicksburg, they would control access to the mouth of the Red River and points west. The sharp bend in the Mississippi River has since changed, leaving Port Hudson several miles from the river.

Union Admiral David G. Farragut and General Nathaniel P. Banks tried, but failed to starve the Confederate troops at Port Hudson. Banks and the Union Army assaulted Port Hudson from May to July 1863. The 6,500 Confederate soldiers, under the command of General Franklin Gardner, held back 30,000 Union soldiers for nearly two months; the Confederates at Port Hudson surrendered only after the surrender at Vicksburg. On July 4, 1863, according to historian Lawrence Hewitt, one of most significant features of the battle at Port Hudson was the first use of black soldiers in combat for the Union cause, which led to the eventual enlistment of nearly 180,000 black soldiers into the Union Army (Hewitt 1987:x-xiv; Spedale 1986:xv).

ECONOMIC BASE

West Feliciana has historically relied on agriculture to encourage settlement and support its population. Proximity to the Mississippi River, extensive slaveholdings, and large plantations contributed to its prosperous economy during the antebellum period (Frazier 1969:x-xi). Agriculture began to develop after the turn of the nineteenth century with the immigration of Anglo-Saxon settlers. William Barrow brought the first slaves to Feliciana from North Carolina in 1800. Slave labor for agricultural production gradually became more and more important to the economy of the parish. In 1820, slaves comprised about fifty-six percent of the population, but a decade later slaves had increased to seventy-four percent of the total population. During the 1840s and 1850s, there were four times as many slaves as whites in West Feliciana Parish, demonstrating its substantial wealth and the importance of slavery to the economy. In West Feliciana Parish in the 1850s, two slaveholders "owned more than 500 slaves; five owned between 200 and 500; and thirty-one owned over 100" (Frazier 1969:7-9).

Cotton was introduced into West Feliciana Parish in 1700, and by 1860 had become the most important cash crop for planters. The cotton gin was introduced to Old Natchez District (which included the Felicianas) in 1795, increasing the value of the crop to planters. Out of 233 West Feliciana plantations in 1850, 187 raised cotton (Miller 1987:1; Frazier 1969:15).

During the three decades before the Civil War, sugar cane came to be the second most important cash crop in West Feliciana. William R. Barrow of Greenwood Plantation was one of the largest sugar cane producers, making 1,210 hogsheads of sugar in 1859-1860. Planters also raised a variety of crops for local consumption. In addition to the cash crops, corn, peas, sweet potatoes, Irish potatoes, hay, and oats were raised along with livestock such as cattle, hogs, horses, and mules. Bennet H. Barrow planted an orchard of a variety of fruit trees. Planters further supplemented their diet with wild game, turkey, chicken, and fish (Frazier 1969:28-29, 44, 104).

Steamboat service began on the Mississippi River in 1811, further increasing commercial traffic. Most planters used steamboats to transport crops, especially cotton, to market (Frazier 1969:23). Bayou Sara increased in importance as a commercial trade center for plantations in Feliciana, but decreased when the railroad came to St. Francisville (Miller 1987:2-3). The West Feliciana Railroad was chartered in 1831, but took several years to build and cost \$25,000 per mile. It bypassed Bayou Sara, but linked St. Francisville to Woodville, Mississippi with 27 mi of standard gage track. The railroad increased the access of the upland planters to the Mississippi River, adding to their prosperity. In 1892, the West Feliciana Railroad merged with the Illinois Central Railroad (West Feliciana Historical Society 1972:14).

Although cotton was "king" in West Feliciana Parish during the antebellum period, a prosperous merchant class emerged to rival the entrenched plantation class after the Civil War. The number of buildings remaining from the Gilded Age attest to the prosperity of that era for St. Francisville and West Feliciana Parish. The parish economy declined, however, between 1910 and 1940 due to the boll weevil infestation and the Great Depression. It has continually grown since World War II, however, due to the new petrochemical industry, the expansion of Angola prison, and the construction of Riverbend Nuclear Power Plant (Miller 1987:2).

RESULTS OF ARCHIVAL RESEARCH

The project area along the eastern bank of the Mississippi River is located in Range 4 West and portions of Townships 1, 2, & 3 South and includes the area from near Bayou Tunica to the middle of Iowa Bend. Although Jeffrey Brain focused on the location of the Tunica tribe historic sites in his book, *Tunica Archaeology*, he included an important chapter on the early history and maps of the area. Most of the early maps showed the location of Tunica villages in the vicinity, but provided only a slight mention of European habitations.

The Ross map, presented above as Figure 16, was drawn in 1765 and published a decade later. This map showed the location of several Indian villages, but it also noted sites of European occupation such as the abandoned French fort near the Raccourci cutoff, Round Island (Tunica Island), and James Village on the north side of Iowa Bend. As noted earlier, it is unclear what the James Village was. Several other maps show a Tunica village near the location in the 1770s, but no other map but the Ross map depicts a James Village. According to the Wilton Map (Figure 21), a Mrs. Margaret Thomas owned 400 ac at this location. Mrs. Thomas was married to a British Indian agent, John Thomas. Perhaps this Indian agent had assigned the name James Village to the Tunica settlement, but there are no references to this being the case. It was just as possible that James Village was a temporary English settlement to counter the French influence of Pointe

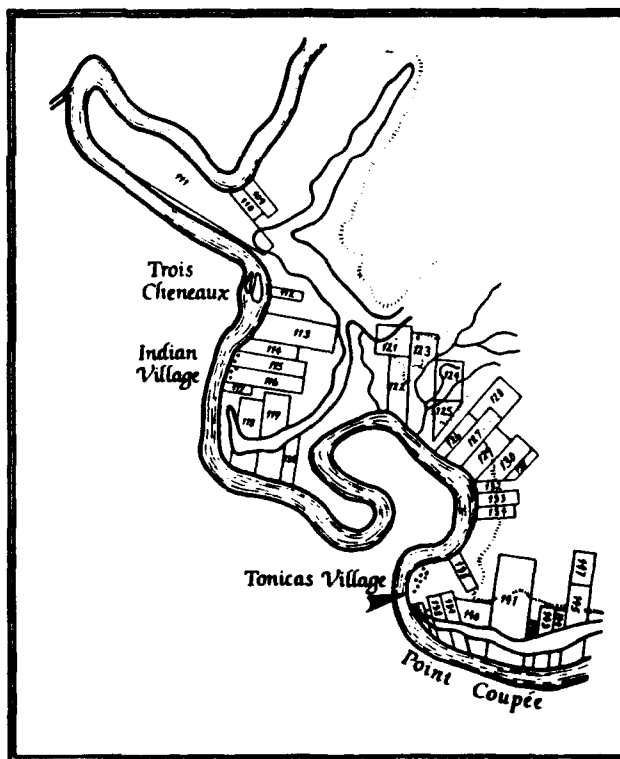


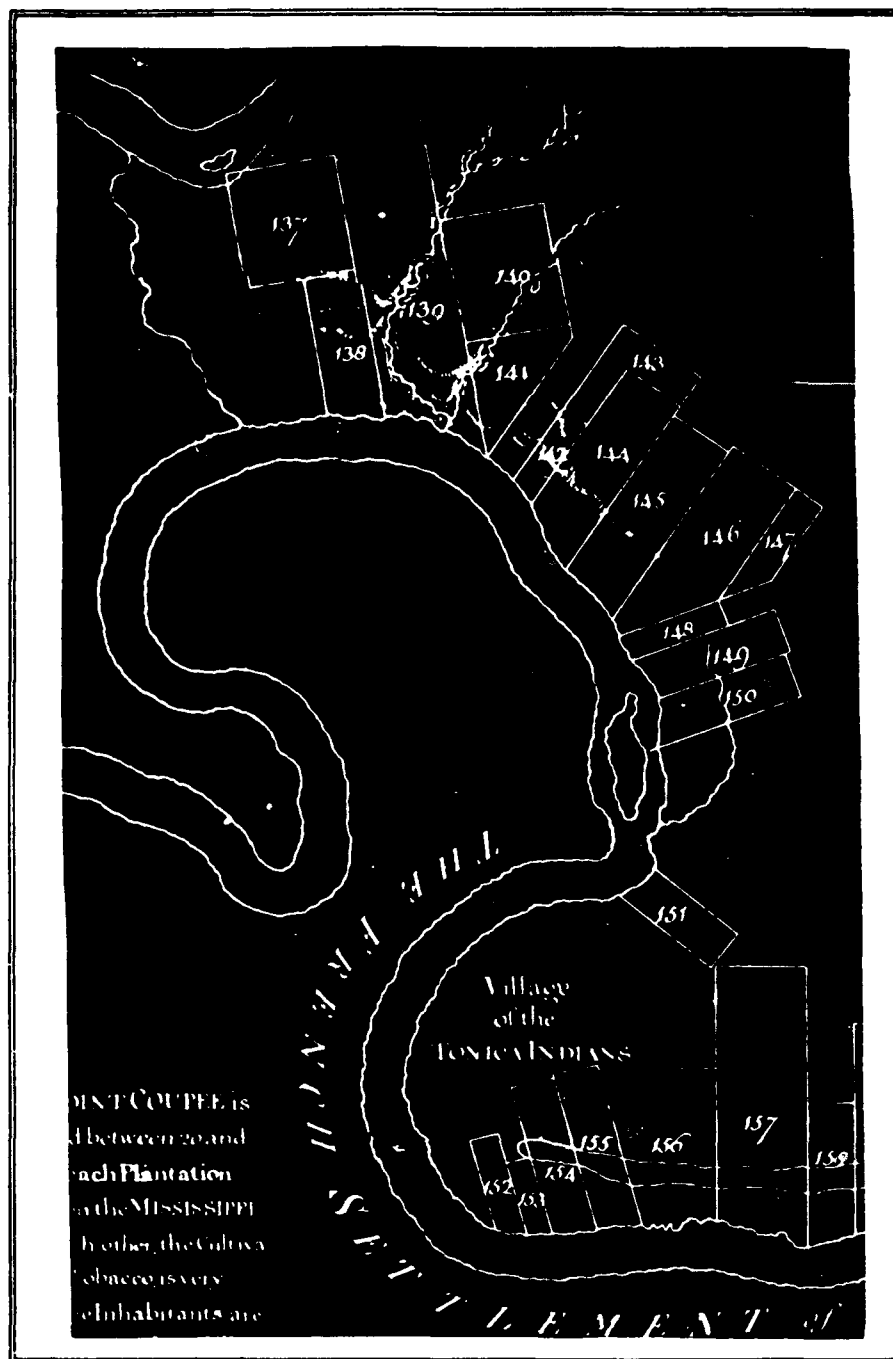
Figure 21: Detail of Wilton Map of 1774.

Coupee across the river. Whatever the case, later documents concerning land claims and ownership never mentioned a James Village.

According to the Gauld map (1778) (see Figure 20), Haldimand's Hill named for British General Frederick Haldimand, was located just south of the old Tunica Village. The more detailed 1774 Wilton map illustrated the location British land grants in the area. Among those receiving British grants between Tunica Bayou and Iowa Bend were General Frederick Haldimand, Herbert de Munster, Earlle, Martain, Blommart, Walther, Crockett, Folley, Livingston, Urquessart, Falconer, and Thomas (Brain 1988b:21-45; Michael Robinson, personal communication 23 December 1991). Haldimand turned his land over to James Willing, who gave the land to Oliver Pollock. Tunica Bayou was at one time referred to as "Willing's Bayou" (Brain 1988b:39-41). The Durnford map from the early 1770s is presented again as Figure 22 with a list of property owners by parcel number. This map was done about the same time as the Wilton map and depicts more or less the same sections as the Wilton does, but gives them different numbers. Also, the spellings of the names of the land grantees varies between the two maps. When the Spanish took over West Florida in 1779, after 16 years of British rule, British citizens with land grants had to swear allegiance to Spain to claim their land. Few chose to do so, although some British claims were submitted to emissaries of the United States for recognition after the American takeover of West Florida in 1810 (Arthur 1935:16-17).

During the late 1700s, the Spanish crown encouraged settlement in West Feliciana by granting large tracts of land to settlers, even though most were of Anglo-Saxon origin (Arthur 1935:15). The Spanish granted the vacant Haldimand Tract to Carlos Trudeau (Charles Laveau), who surveyed the land in 1788. Although Trudeau's widow resold the land a year later to Oliver Pollock, the name Trudeau remained with the property and was eventually used to denote an archeological site on the land (Brain 1988b:41).

The acquisition of Louisiana by the United States, and the subsequent land claims based on British, French, or Spanish grants, caused significant problems for the Federal government. Congress spent a significant amount of time enacting laws and procedures to deal with the changeover. Louisiana had nearly 10,000 private land claims covering more than four and a half million ac. After the American acquisition of Louisiana, and later acquisition of the Florida parishes, speculators flocked to Louisiana hoping to profit from the confusion. Not all of the occupied land had been formally granted by the British, French, or Spanish governments, so claims had to be examined by representatives, one by one, in order to guard against rampant fraud. The most important law for the Florida parishes was a statute that nullified any claim that was based on a grant made after June 1804. For example, John Rhea, hero of the West Florida Revolution, submitted claims for land totalling more than 6,000 ac, more than three times the maximum 2,000 ac allowed per claimant. He also submitted an additional seven claims for land based on patents issued after June 1804. In 1819, Congress established a land office at St. Helena and appointed Charles S. Cosby and Fulwar Skipwith to review and recommend claims. Some of the early claims



Section - Owner

- 137 Peter Chester
- 138 Thomas Hardy
- 139 Henry Fairchild
- 140 Herbert De Muns
- 141 Frederick Haldimaud
- 142 George Earle
- 143 Alice Blomart
- 144 Jonathon Allen Martin
- 145 John Walker
- 146 John Crokat
- 147 Patrick Foley
- 148 Philip Swingston
- 149 George Urquhart
- 150 John Falconer
- 151 Margaret Thomas

Figure 22: Detail of 1771 Durnford map of Mississippi River. Ownership of sections listed at right. Source: Hill Memorial Library, LSU.

on the land between Tunica Bayou and Iowa Bend were reviewed by Cosby and Skipwith, but it wasn't until 1854 when most of the legislation on foreign land titles in Louisiana was passed (Coles 1955:1-19). Table 7 lists the individuals who made claims on the portions of the Mississippi River within the current project area.

In the antebellum era most of the land along the Mississippi River between Tunica Bayou and Iowa Bend was held by large landholders, although a few small landholders owned some parcels. In a study of "The Great Planter in West Feliciana Parish" between 1850 and 1860, Wattine Frazier identified Greenwood and the Acklen Estate (Angola) as the only large plantations along the Mississippi River. Most of the West Feliciana Parish plantation houses were along Bayou Sara or in the Tunica Hills, not on the Mississippi River, but this did not preclude large landholders from owning cultivated parcels along the river. The floodplain along the Mississippi River was fertile, but not necessarily desirable for habitation (Frazier 1969:xii). In the course of settlement during the last two hundred years, most of the arable land between Tunica Bayou and Iowa Bend was cultivated, but hundreds of ac in the southern reach of the project area have long been swamp land and have never been useful to the planters of West Feliciana. Unlike other plantation areas along the Mississippi River in Louisiana, landowners had the option of living in the uplands, therefore few plantation homes were built directly on the banks of the Mississippi River in West Feliciana Parish.

After the United States took over West Feliciana Parish in 1819, landowners placed land claims with the Federal government. Along with the problem of establishing the United States Rectangular Survey on the landscape, the Federal government had to verify the various land claims in West Florida. Because of the problems of old land grants from Spain, France, and Britain, deed research is a very complicated procedure. Parcels of land were identified vaguely by distance along a water route that no longer exists and by the ownership of surrounding parcels, increasing the difficulty of showing the chain of title. Furthermore, the range, township, and section system does not necessarily correspond with historic boundaries. Thus, the ownership of the land between Tunica Bayou and Iowa Bend can be established only in general terms for certain periods of time. It can be said with certainty, however, that from about 1800 until about 1920, all arable land was probably planted in cotton or sugar cane.

By 1858, *Norman's Chart of the Lower Mississippi River* (Figure 23) listed the landowners along the Mississippi River, from North to South starting at Tunica Road and ending in the middle of Iowa Bend, as follows: O. P. Robinson Plantation, W. R. Winbush Plantation, W. L. Brandon (Como Plantation), J. R. Winbush Landing, W. R. Barrow (Sebastopol), School, N. Carmouche, F. Ortiz, L. Villaret, T. Leonard, P. Lavergne, J. P. Bryant and Brady, Widow C. Leonard, T. Leonard, C. Lavergne, Z. Lacour, M. Bisset, H. M. Cobb, and Theodule Leonard. Apparently some continuity of ownership existed in the general area, but the notarial records also indicate that a significant amount of land was changing hands regularly.

TABLE 7
TABLE OF LAND CLAIMS IN PROJECT AREA BY SECTION, 1813-1854
WEST FELICIANA PARISH, GREENSBURG DISTRICT

RANGE	TOWNSHIP	SECTION	ACRES	OWNER	DATES
4W	1S	53	832.63	Claimed by A. Baudin	1820/1822
4W	1S	54	746.19	Claimed by Heirs of William Ratliff	1813/1819/1823
4W	2S	4	141.96	Claimed by Heirs of William Ratliff	1830
4W	2S	27	108.50	Israel Barrett	1837/1854
4W	2S	28	1.50	Israel Barrett	1837/1854
4W	2S	29	64.68	Israel Barrett	1837/1854
4W	2S	30	141.60	Israel Barrett	1837/1854
4W	2S	41	817.95	Claimed by Heirs of William Ratliff	1825/1826
4W	2S	42	339.50	Claimed by Heirs of William Ratliff	1813/1819/1825
4W	2S	43	184.72	Claimed by Heirs of William Ratliff	1813/1819/1825
4W	2S	44	745.36	Claimed by William Wikoff	1820/1822
4W	2S	45	854.66	Claimed by Richard Ratliff	1813/1819
4W	2S	53	349.96	Claim of John A. Hiltz	1822
4W	2S	54	1417.50	Claim of Henry Flower	1822
4W	2S	56	19.38	Claim of Henry Flower	1822
4W	2S	59	164.79	Claim of Heirs of William Ratliff & William Wikoff	1825 1820
4W	3S	16	452.64	Selected by State of La., Rejected	1898
4W	3S	17	45.20	State of La. (acquired as swamp land) Stirling Alexander	1849/1854 1854
4W	3S	41	326.52 719.62	Claim of Heirs of Pierre Rousseau	1820 1860 Plat
4W	3S	42	659.38	Claim of Peter L'eglise	1821/1846
4W	3S	43	84.46	Claimed by Marguerite Baron	1834
4W	3S	44	678.37	Claimed by Marguerite Baron	1834
4W	3S	76	161.48	State of Louisiana (swamp land) C.S. Hale	1850/1854 1834
4W	3S	77	158.44	State of Louisiana (swamp land) Theodule Leonard	1850/1854 1834
4W	3S	78	159.68	State of Louisiana (swamp land) Theodule Leonard	1850/1854 1834
4W	3S	79	163.80	State of Louisiana (swamp land) Lejeune Lartique	1850/1854 1834

TABLE 7 (CONTINUED)
TABLE OF LAND CLAIMS IN PROJECT AREA BY SECTION, 1813-1854
WEST FELICIANA PARISH, GREENSBURG DISTRICT

RANGE	TOWNSHIP	SECTION	ACRES	OWNER	DATES
4W	3S	80	161.08	State of Louisiana (swamp land) Charles Lavergae	1850/1854 1834
4W	3S	81	227.04	State of Louisiana (swamp land) Theodule Leonard	1850/1854 1834
4W	3S	82	169.12	State of Louisiana (swamp land) Widow C. Leonard	1850/1854 1834
4W	3S	83	168.96	State of Louisiana (swamp land) Widow C. Leonard	1850/1854 1834
4W	3S	84	168.88	State of Louisiana (swamp land) J.A. & C.G. McHatton & Co.	1850/1854 1834
4W	3S	85	168.64	State of Louisiana (swamp land) Paulin Lavergne	1850/1854 1834
4W	3S	86	168.60	State of Louisiana (swamp land) Theodule Leonard	1850/1854 1834
4W	3S	87	168.60	State of Louisiana (swamp land) Louis Villeiet Theodule Leonard P.W. & S.D. Barrow	1850/1854 1834 1882 1893
4W	3S	88	168.56	State of Louisiana (swamp land) Francois Ortiz	1850/1854 1834

It is also important to consider the changes the Mississippi River has made in the general area. Some of the sections in the project area were not riverfront property in the last century. See Chapter 2 for discussion of the changing course of the Mississippi River. The Surveyor General's maps from 1870 show the original claimants and the land mass, presumably as it was in the early 1800s. At that time, Tunica Island was a distinct island in the middle of the Mississippi River. By 1988, the eastern channel around Tunica Island has completely silted in, isolating original riverfront holdings from the Mississippi River and essentially enlarging the mass of Tunica Island.

Similarly, in comparing the eastern Mississippi River shoreline on the 1879 and 1921 Mississippi River Commission Maps, it is apparent that Iowa Bend has been reduced in size, Tunica Island has been silted in, and that Tunica Bend has deepened. Thus, the riverfront property parallel to Tunica Island is now inland and the riverfront properties on Iowa Bend and Tunica Bend have eroded extensively. In 1991, the drastically changed riverfront does not represent the earlier, historical landscape.

The Surveyor General's map, modified from the original in Figure 24 shows the land ownership in the project area. In Range 4 West, Township 1 South, A. Baudin claimed the 833 ac of land in Section 53, and the Heirs of William Ratliff claimed the 746 ac in Section 54. Ratliff's heirs also claimed more than 2500 ac to the south along the Mississippi River in Sections 4, 41, 42, 43, 45, and 59 in Township 2 South. The Ratliff property had been part of a Spanish land grant to William Hindlaw and included Como plantation. Israel Barrett claimed more than 300 ac along the Mississippi River in Township 2 South, as did John A. Hiltz. Hiltz's claim was based on the purchase of an original claim by James M. Bradford. Henry Flower had one of the larger claims, for more than 1400 ac, some of which was based on a claim by James Kavenagh (Louisiana General Land Office, Federal Entry Record Book ND:198-216; State Entry Record Book ND:285; *American State Papers*, *Public Lands* ND 3:413-414).

In Township 2 South, William Wikoff's claim of 745 ac was approved in 1822, but his son George A. Wikoff of St. Landry Parish sold the property to James R. Winbush in 1858. The heirs of William Ratliff, and Richard Ratliff also claimed property in this township. Richard Ratliff sold section 45 to William R. Barrow in 1828, but in 1842 the ownership was in dispute between the two men (Louisiana General Land Office, Federal Entry Record Book ND:198-216; West Feliciana Parish Notarial Records ND N:14, H:153-155).

In Township 3 South, Marguerite Baron claimed more than 750 ac; Peter Léglise and the heirs of Pierre Rousseau also claimed acreage. Complicating the transfer of ownership, the Peter Léglise claim was confirmed in 1846, fifteen years after the land was sold to Jacob M. Hunter. The latter's claim to Section 41 was based on a 1789 Spanish land grant to Pierre Rousseau and was approved by the U.S. Congress in 1822, but was sold by his heirs to Bennet Barrow and Amaron le Doux in 1841. In claims dated from the 1830s, Theodule

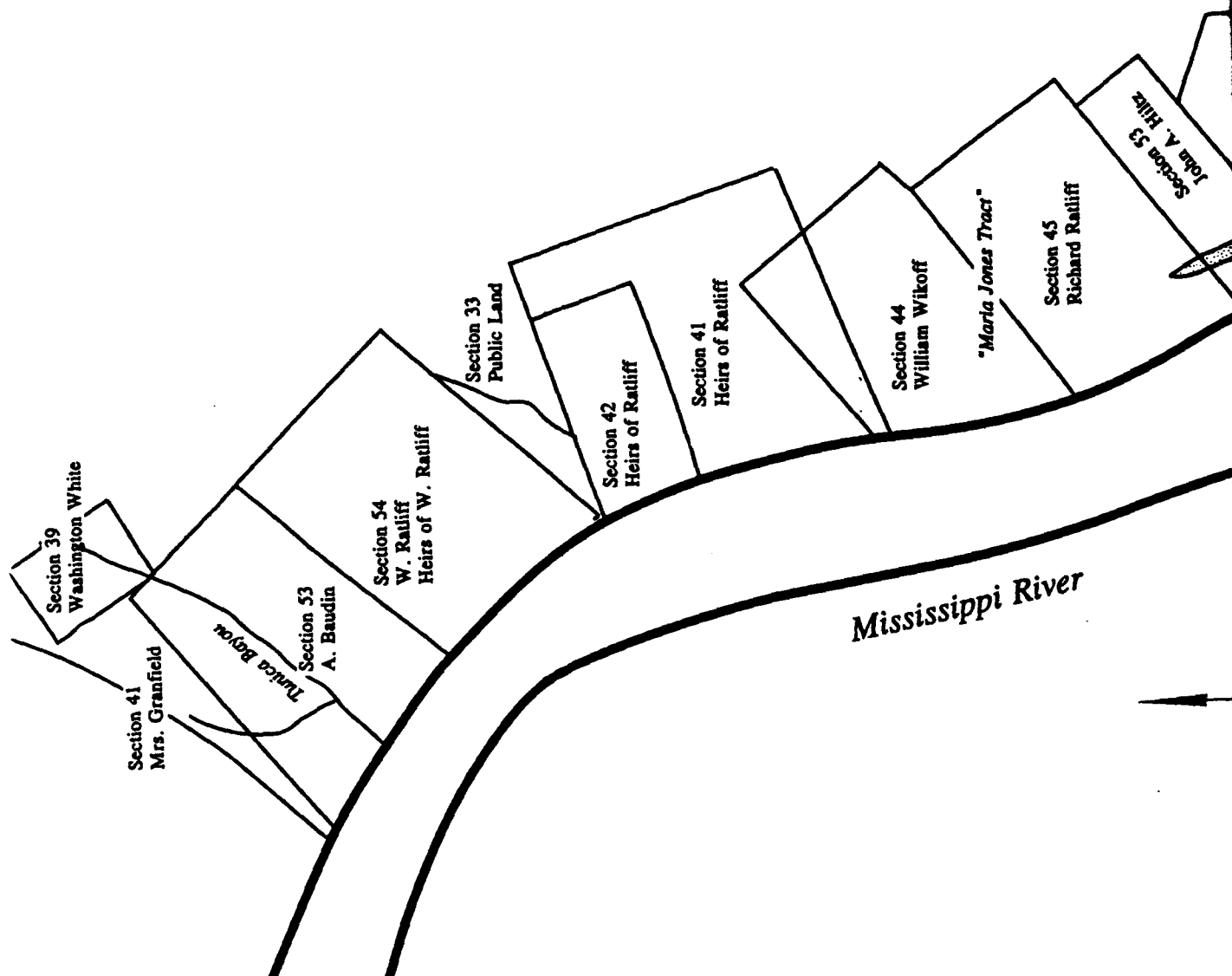
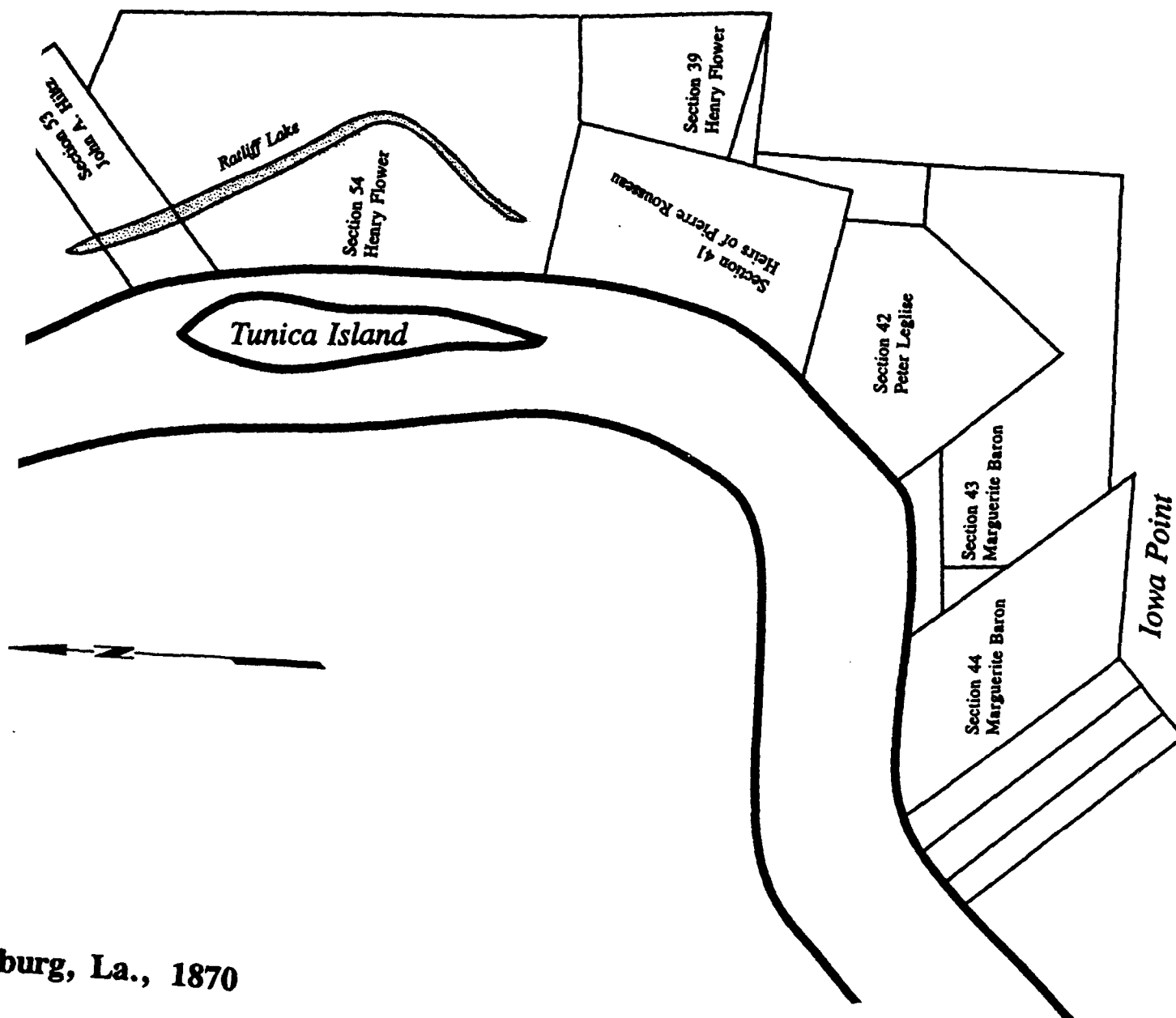


Figure 24: Detail of Surveyor General Map, Greensburg,



Iberville, La., 1870

'80

Leonard and Widow C. Leonard acquired more than 1200 ac along the river. Paulin Lavergne and Charles Lavergne claimed more than 320 ac. Other smaller land owners in Township 3 South along the river and the approximate date of claim included James A. and Charles G. McHatton and Company (1834), which had larger landholdings in East Baton Rouge Parish, Stirling Alexander (1854), Francois Ortiz (1834), C. S. Hale (1834), and P.W. and S. D. Barrow (1893). Louis Villeiet's (or Villere) claim to Section 87 was approved in 1834, but was sold to Theodule Leonard in 1882, who sold it to P.W. and S.D. Barrow in 1893 (Louisiana General Land Office, Federal Entry Record Book ND:198-216; State Entry Record Book ND:285; West Feliciana Parish Notarial Records ND F:99, H:60-61, T:99, V:195).

According to records in the West Feliciana Parish Courthouse, many of the landowners in the table above owned multiple tracts of land and were slaveowners. With the exception of the Barrow family and W. L. Brandon, however, none of the surnames are listed in Karl Menn's 1860 census analysis, *The Large Slaveholders of Louisiana*. Menn only included slaveholders with fifty or more slaves, thus the overwhelming majority of landowners were either deceased by the date of Menn's publication or owned less than fifty slaves.

COMO PLANTATION

Como Plantation, located near the mouth of Como Bayou, is the only plantation home in south Louisiana with an unobstructed view of the Mississippi River. Unlike other riverfront plantations in Louisiana, there is no levee between Como Plantation and the river. Como is also the only riverfront plantation house in the project area between Tunica Bayou and Iowa Bend.

Como Plantation once flourished as a small center of trade as well as working plantation. For many years it was also known as Brandon and that place name survives on current maps of the area. The community had a post office and after 1903 direct access to a railroad. During the riverboat days, bagged mail was picked off a hook by passing boats. Brandon also had a saw mill, a moss press, and a cotton gin. Despite the trade, Como Plantation must have been of little influence in West Feliciana Parish. Very little evidence remains of the small village today (Baton Rouge *Sunday Advocate* 19 July 1981; personal communication Kenneth Kennon 1992).

Como Plantation was established on land originally granted by the British government to Henry Fairchild (Brain 1988b:40). Apparently Fairchild abandoned the property when the Spanish took over West Florida, because the land was granted by the Spanish government to William Hindlaw. It was claimed by the heirs of William Ratliff in the 1820s when the United States took over Louisiana and required formal survey of the land (Surveyor General's Office 1870). Eventually, Ratliff's daughter, Ann E. Ratliff, inherited the

property. In 1833, at age 20, Ann Ratliff married William L. Brandon of nearby Wilkinson County, Mississippi. In a lengthy marriage contract entered in the notarial records in the West Feliciana Parish Courthouse, William Ratliff's widow arranged to protect her daughter's property. Ann Ratliff owned personal property, slaves, and land, including the 1000 arpent tract granted to William Hindlaw (West Feliciana Parish Clerk of Court Notarial Records ND E:117-120).

William Brandon was born in 1805 in Wilkinson County, Mississippi, the son of Colonel Gerard Brandon, a native of Ireland who earned his land title by fighting for the British in the American Revolution. William Brandon graduated from Washington College in Virginia and attended Princeton College. In 1824, he returned to the family plantation in Mississippi, served as a member of the Mississippi legislature, and eventually fought in the Mexican American War. Joseph Karl Menn included William L. Brandon in his study, *The Large Slaveholders of Louisiana-1860*. He reported that by 1860 Brandon owned \$14,000 in real and \$64,000 in personal property in Louisiana, including 63 slaves and 16 slave dwellings (Menn 1964:224-233).

The Brandons had three sons who survived to adulthood: William R. Brandon, Robert L. Brandon, and Lane W. Brandon. Ann Ratliff Brandon died in 1840, but her husband continued to take care of the Como Plantation tract, in addition to maintaining his own large landholdings in Mississippi. For example, William Brandon contracted with Donelson Jenkins to build a levee to protect portions of Como Plantation in 1855. Although Brandon cultivated the land, he and his family still resided in Mississippi in 1855 (West Feliciana Parish Notarial Records ND L:449-50). At the time of the publication of both La Tourrette's 1845 *Reference Map of the State of Louisiana* and Persac's 1858 *Norman's Chart of the Lower Mississippi River*, William L. Brandon was still proprietor of Como Plantation.

In his sixties, William L. Brandon joined the Confederate Army in 1861 and served as a captain of Company D of the 21st Regiment of Mississippi Volunteers. He lost a leg in the Battle of Malvern Hill, but recovered to fight in the battle of Chickamauga. Brandon eventually earned the rank of brigadier general, and served the remainder of the Civil War at headquarters in Enterprise, Mississippi. William Brandon's sons also served in the Civil War. William R. Brandon, a physician, was severely wounded at the Battle of Gettysburg. Robert L. Brandon, a graduate of Yale, and Lane W. Brandon, a graduate of Harvard, also fought for the Confederate cause. The latter achieved the rank of captain, having fought at Chickamauga, Petersburg, and Fredericksburg, and survived as a prisoner of war. William L. Brandon resided on the family plantation, Arcole, in Mississippi until his death in 1890 (Menn 1964:224; Robinson 1936:89-93).

After the Civil War, Lane Brandon took over and managed Como Plantation. He married Anna Semple in 1866 and they had four daughters: Mrs. Francina Brandon Barrow, Mrs. Sarah Brandon Buchanan, Miss Belle Brandon, and Mrs. Mary Brandon Wood.

Continuing the family tradition of public service, Lane Brandon served as the West Feliciana Parish Clerk of Court in the 1880s (Robinson 1936:89-93).

According to David King Gleason, Como Plantation was named after Lake Como in Italy. The original antebellum home burned some time in the late nineteenth century and a replacement house was constructed about 1890. The original plat consisted of 1800 ac, but erosion from the Mississippi River and the subdividing of the original landholding have diminished the original property size (Gleason 1975:1; 1982:102-103).

The community called Brandon, already an important center for riverboat trade, became more important after 1903 when the Shreveport and Red River Railway Company put in the railroad and a small depot. This nearby railroad access provided residents with a direct route to New Orleans and increased the commercial value of the area. The railroad was eventually purchased by the Louisiana-Arkansas Railroad Company. The depot was converted into a kitchen for the Como Plantation house in the 1980s. By that time, the railroad right-of-way formed the northeast boundary of the property (West Feliciana Parish Notarial Records X:451, 464; personal communication Kenneth Kennon 1992).

Como Plantation became the property of the four Brandon daughters after the deaths of their parents, Anna Semple Brandon and Lane W. Brandon. Shortly after the succession in 1918, the heirs sold the house and 1960 ac to Mary Brandon Wood, already a widow herself. Included in the transfer were the parts of Como known as "Bobstown" and "Motley." Perhaps because of the financial pressures of the Great Depression, Mary Brandon Wood sold the timber on 1000 ac of Como Plantation to Tunica Hardwood Company in 1937 (West Feliciana Parish Notarial Records 30:379, 385, 40: 432).

Mary Brandon Wood gave Como Plantation to her granddaughter, Lacy Brandon Peterson, in the 1960s. Although the donation included only the house and about 80 ac of surrounding property, it was contested by other family members. The courts upheld the donation to the granddaughter, but Lacy Brandon Peterson Christenson died in the early 1970s, causing Como Plantation ownership to revert to her father, Dudley Peterson. Dudley Peterson sold the property to Kenneth C. Scullin of East Baton Rouge Parish, who in turn sold it to Camille Cazedessus and Kenneth W. Kennon in 1973 (West Feliciana Parish Notarial Records 54:357; 63:401; 64:314; personal communication Kenneth Kennon 1992).

Cazedessus and Kennon sold Como to H.V. Farrar, Inc. in 1982. Unique Properties and Como Plantation, Inc. also owned the plantation in the 1980s, but were forced to return the property to the Bank of St. Francisville. A couple from New York, Beekman Devereaux (Toby) Beavers and Terri McDermott Beavers, purchased Como Plantation in 1989 and are the current owners (West Feliciana Parish Notarial Records 83:682, 103:890).

THE BARROW FAMILY

By the 1850s, the Barrow family had acquired several tracts of riverfront property, including Tunica Island, and were large landholders and slaveholders in the area. According to Wattine Frazier, the Barrow family brought the first slaves to Feliciana in 1800 from North Carolina (Frazier 1969:7).

Olivia Barrow, a widow, moved her family to Louisiana in 1798, settling in what is now West Feliciana Parish in 1800. With her were her three sons, William, John, and Bartholomew, as well as three daughters. The Barrows purchased Spanish land grants totalling 7,000 ac, and proceeded to establish large plantations in the parish. Highland Plantation (originally called Locust Grove) was built for Olivia Barrow about 1800; she died in 1803. Her son William Ruffin Barrow built Greenwood Plantation in the 1820s. He also purchased the Croker Plantation in 1800, but sold it to his brother Bartholomew, who in turn sold it to his son David Barrow in 1820. David Barrow rebuilt the 1799 Croker house in 1849 and renamed it Afton Villa (Seebold 1941; Arthur 1933).

William Ruffin Barrow's son, Bennet H. Barrow kept a diary of his plantation life which has since been published as *Plantation Life in the Florida Parishes of Louisiana, 1836-46*. Barrow was born in 1811, schooled in Washington, D.C., and married Emily Joor in 1830. His diary described his daily life, buying and selling land, planting and harvesting cotton and sugar cane, treatment of slaves, and leisure activities. Barrow, like most large plantation owners, was constantly juggling his debt to buy more land to raise more crops. Highland Plantation was largely self-sufficient, relying on vegetable gardens, livestock, corn, and oats to supply various needs. Although Barrow believed that slaves would work better if treated well, his diary still had several entries regarding slave punishment (Davis 1943:11-12, 31-33, 42-52).

Greenwood Plantation is located inland from Como Plantation, on land that was originally granted by the Spanish to Oliver Pollock, who sold the land to the Barrows. William Ruffin Barrow built the Greek Revival plantation house in the 1820s. The plantation once had several outbuildings typically associated with large plantations, such as sugar mills and slave cabins. After Barrow's death during the Civil War, the house had several owners. It remained vacant for several years after 1960, but was eventually purchased by Richard and Carol Barnes who rebuilt the plantation house, finishing in 1983 (Louisiana Works Progress Administration 1941:522; Hamilton 1983:24-25; Baton Rouge *State Times* 25 August 1983).

Menn's *The Large Slaveholders of Louisiana* reported six different Barrows with holdings of fifty or more slaves. These included B.J. Barrow, D. Barrow, J.J. Barrow, R.H. Barrow, W.H. Barrow, and W.R. Barrow. The value of the real property of these Barrows combined was more than \$1 million; their personal property was valued at more than twice that. Their combined property totaled more than 17,000 ac, but less than half of that was improved land. All of the Barrows grew cotton, but only J.J. Barrow raised sugar cane (Menn 1964:226-227).

THE MOVIE "LOUISIANA"

In 1983, Como and Greenwood Plantations served as the set for the filming of the Home Box Office movie, "Louisiana." The \$12 million movie was based on a trilogy written by French writer Maurice Denuziere about the attachment of a southern woman to her plantation during the antebellum period, the Civil War, and Reconstruction. Actress Margot Kidder and actor Ian Charlson starred in the movie, which was released in 1984. Part of the setting included the construction of a town set called "Pointe Coupee" on the site of Brandon, a short-lived plantation village, located on Como Plantation. Period structures built for the movie included a church, a store, and a blacksmith shop. River docks were also constructed at Como for the filming of the landing of the steamship *Delta Prince*, a renovated U.S. Army Corps of Engineers snagboat made to look like a paddlewheel steamer (New Orleans *Times Picayune* 22 March 1983; Baton Rouge *Sunday Advocate* 13 March 1988; Baton Rouge *Morning Advocate* 24 May 1983).

The production company also made changes at nearby Greenwood Plantation. Greenwood was built by the Barrow family in 1824, but burned in 1960. Owners Richard and Carol Barnes rebuilt the home, but were just short of completion when crews came to construct the set. The Barnes had not finished the landscaping, so the production company laid sod, planted landscaping, and hung two tons of Spanish moss in the surrounding oak trees. Several buildings were added to the site, including an overseer's cottage and several slave cabins (Baton Rouge *State Times* 25 August 1983).

The construction of the set was not limited to architecture and landscaping. Eight thousand cotton plants were started in greenhouses, then planted in nearby fields in order to film cotton-picking portions of the movie months before the bolls naturally set. To further create the effect of large cotton fields, cotton balls were sewn on nets and draped over fields (Baton Rouge *Morning Advocate* 24 May 1983). Although the cotton scenes were filmed with little difficulty, nature intervened in the filming at Como Plantation. Producers of the movie "Louisiana" ran into some difficulty during May of 1983, when the Mississippi River flooded the set at Como plantation. Despite this, the filming remained on schedule and the film was completed (Baton Rouge *Morning Advocate* 24 May 1983).

CHAPTER V

PREVIOUS ARCHEOLOGICAL INVESTIGATIONS IN THE REGION OF THE PROJECT AREA

RESEARCH ARCHEOLOGICAL INVESTIGATIONS

The region around the project area has witnessed significant scientific archeological investigation since the early twentieth century. Some of these investigations were conducted by eminent researchers whose work and interpretations have contributed significantly to the directions of archeology in North America and the Lower Mississippi Valley. Also, several cultural resource surveys have been carried out by contract archeological concerns and have contributed to the record of human occupation in the region. Figure 25 presents the distribution of previously reported archeology sites in the region of the project area, many of which are discussed below.

The first archeological investigation in the project area consisted of the report and collection from the Trudeau Site (16WF25) by Captain W.P. Hall in the early 1880s on behalf of the Davenport Academy of Science. In May of 1883, in a presentation to the Academy, Hall described brass kettles, glazed pottery, glass beads, and other items of European manufacture as burial furniture with aboriginal burials. His somewhat limited description of the site left little doubt that these artifacts were from the Trudeau Site, *although this name did not appear in the report* (Brain 1988b:66-67).

As far as can be ascertained, the second archeological investigator in the region was Clarence Bloomfield Moore. Moore was the scion of a wealthy Philadelphia family whose voyages along rivers throughout the southeast in his private steamboat, the "Gopher", contributed significantly to the archeology of the day. While Moore's orientation to mound sites and his excavation techniques may be criticized by modern archeologists, he was conscientious about publishing his reports quickly. He also made a record of many sites that have since been destroyed or greatly altered (Moore 1909, 1911, 1912, 1913).

In 1910 and early 1911, Moore investigated aboriginal sites along the Mississippi River, traveling upstream from New Orleans to Wilson, Arkansas. While Moore's research focused primarily on mound sites, one of the first spots he investigated on this particular journey was a site which did not have a mound: Trudeau Landing in West Feliciana Parish. Here, he found "black soil, indicating former aboriginal occupancy and a smoking pipe of 'catlinite'" (Moore 1911:376). In addition, he reported on various objects of iron and steel and debris from dwelling sites, by which he probably meant pottery sherds. No graves were found by Moore and because this was a primary focus of his research, the impression from his report is that he was rather disappointed with the site. It is ironic that the Trudeau Site (16WF25) became a site renowned for its burials and associated artifacts 60 years later (see discussion below).



Figure 25: Location of Reported Archeological Sites in Vicinity of Project Area

There was a hiatus of over 25 years before there was any further archeological investigation in the region. In 1934, James A. Ford, then affiliated with Louisiana State University, conducted archeological investigations on the east bank of the Mississippi at the base of the Tunica Hills in the general region of Angola Prison Farm. He reported the Angola Farm Site, now designated as 16WF2, was a Houma village, visited by Iberville in 1699. Ford (1936:129-140) also noted a great bend in the Mississippi River to the west which was then the mouth of the Red River. This combination of a confluence of two major streams; a portage that cut the distance of a river considerably; and terrain that was elevated above the Mississippi River floodplain, no doubt made this an enviable location for aboriginal occupation.

Cultivation at the prison farm in 1934 revealed human burials that led to archeological investigation by Ford soon afterward. The LSU sponsored project excavated 10 aboriginal burials that were accompanied by apparent European trade items, as well as articles of Indian manufacture. The pottery types found in these burials served as horizon markers for contact period artifacts that contributed to Ford's construction of a ceramic chronology for the Lower Mississippi Valley and other portions of the southeastern United States (Ford 1936; Ford 1951).

The Tunica Mounds (16WF1), were also investigated by James Ford in 1934, presumably in conjunction with his work at the Angola Prison Farm Site. The site files at the Louisiana Division of Archaeology show that Ford only noted the existence of the mounds and their partial destruction by railroad and highway construction. He also made an artifact collection of "4 sherds, 5 pieces of glass, 2 pieces of porcelain, 1 iron, and 2 misc. clay" (DOA site files; Jones and Shuman 1986). Ford apparently never conducted a more extensive investigation of this site, nor included any information about it in any subsequent reports.

Sometime in the 1930s, the Angola Prison Gate Mound Site (16WF3), was completely levelled by the construction of the hospital at Angola Prison. This destruction did not occur before Dr. Fred B. Kniffen of the Geography and Anthropology Departments at Louisiana State University investigated the fill from the site and reported that there were many burials, some historic, and that there were also 74 "clay squeezes" or Poverty Point objects (DOA site files; Jones and Shuman 1986).

Another hiatus of archeological activity in the region of the project area lasted from Ford's work in the area until the activities of Angola Prison guard Leonard Charrier in the late 1960s led to the discovery and plundering of the famous Tunica Treasure at the Trudeau Landing Site (16WF25). This site is just to the north of the project area across Pollocks Bayou. While Charrier's recovery of thousands of European and aboriginal artifacts was not conducted in a scientific manner, an orderly analysis of the artifacts was eventually undertaken by Jeffrey P. Brain of Harvard University (Brain 1979) and subsequent research at the Trudeau Landing Site and other sites in the vicinity (Brain 1988a; 1988b).

Charrier dug up countless artifacts, including both native and European goods, and moved them to his house. He subsequently contacted archeologist Robert Neitzel of Marksville, Louisiana. Neitzel, in turn, contacted colleague Jeffrey Brain, from the Peabody Museum of Harvard University, about the collection. Charrier's intent was to sell the collection. Brain and Neitzel began negotiations with Charrier, but legal questions and lack of funding stalled acquisition of the collection, although Charrier did loan the collection to the Peabody for safekeeping in 1970. The principal legal problem concerning acquisition centered on ownership of the collection. Although he had spoken to one of the property owners, Charrier did not have a legal claim to the goods. Subsequent legal battles between the State of Louisiana, the Federal government, the Peabody Museum, Leonard Charrier, the property owners, and the Tunica tribe, resulted in the eventual acquisition of the collection by the Tunica tribe in Marksville (Brain 1979:1-32; 1988b:).

The other sites investigated by Brain, in the vicinity of Trudeau Landing, were the Angola Prison Farm (16WF2) and Bloodhound Hill (16WF21). The artifacts from Ford's work at the Angola Prison Farm Site were reanalyzed and the site revisited in preparation for Brain's *Tunica Archaeology* (1988). In 1975, Brain and his cohorts attempted to relocate Ford's excavations and determine if there was a village associated with the burials found by Ford. They were able to generally relocate Ford's excavations, but they were unable to locate any related village midden. Nevertheless, Brain writes: "The location, which features a stream coming out of the bluffs, would have been a prime setting for a small settlement in the eighteenth century. It is probable that Angola Farm was not an isolated cemetery and that there was a small Tunica village or hamlet in the vicinity, as was found to be the case at the closely related Bloodhound site" (Brain 1988b:162).

The Bloodhound Hill Site (16WF21), was reported in 1976 by Warden Ross Maggio of Angola Prison, to several archeologists in Louisiana. The site is located in the western portion of the Tunica Hills on a terrace and a hill east of the terrace. The site was surveyed, tested and excavated by a crew from the Louisiana Division of Archaeology, the Peabody Museum at Harvard University, Louisiana State University, and some inmates at Angola Prison. The work at the site revealed seven burials and a midden area that was somewhat disturbed. Several of the burials contained a large number and wide variety of European trade goods and aboriginal artifacts reminiscent of the Tunica Treasure (DOA site files; Neuman 1984; Brain 1988). The setting of this site, as noted by Brain, was very similar to the setting of the Angola Prison Farm Site.

Brain conducted two seasons of investigations at the Trudeau Site in an attempt to locate more burials for provenience information lost for the Tunica Treasure. He also investigated the more prosaic elements of the site such as middens and house sites that can tell more about the lifeways of a community than just burials. The first (1980) season's work involved an archeological survey that established a control grid over the site, a detailed contour map, and surface collecting of all cultural material. This first season's work also involved a magnetometer and subsurface interface radar (SIR) survey of the Trudeau Site.

The results of the first season's work were regarded as promising enough that a season of test excavations was planned for the following year.

In 1981, Brain and his coworkers placed a series of excavation test units in portions of the site based on the patterns of data recovered the previous year. Units were placed in six loci throughout the site. Aboriginal and European artifacts were recovered in many of these units, as were various features that indicated prehistoric and historic aboriginal occupation, including burials. Brain concluded that the Trudeau Site had been the scene of three separate occupations. The earliest had been by the Baytown culture and was followed 500 years later by an occupation by the Coles Creek culture. This second tenancy was followed by a hiatus of another 500 years until the eighteenth century Tunica occupation (Brain 1988b:146-151).

An intriguing result of Brain's research was the discovery of a building site that contained metal nails and pieces of daub. This building may have combined European and aboriginal construction techniques and may have been a structure of some importance. Brain suggests that it could have been a temple and charnel house at the site (Brain 1988b).

Across the Mississippi, near Innis, Louisiana, the members of the Lower Mississippi Survey (LMS) reported, in 1975, on the possible location of a historic Tunica village site at 16PC32. The reported location of this site was based on a study of early historic maps of the region, although the original report does not cite a specific map (DOA site files). The site files do report, however, that some historic ceramic sherds classified as *Westerwald* were collected. Across the Mississippi River near the community of Innis is Bayou Latanache, reputed to have been named after an eighteenth century Tunica chief (Riffel 1983: 27).

In 1986, Dennis Jones and Malcolm Shuman, of Louisiana State University, conducted an ongoing project to locate and map prehistoric Indian mound sites in Louisiana in a region that included the project area. The Tunica Mounds (16WF1) were investigated and the site, as noted by Ford in the 1930s, had been disturbed by nearby railroad and highway construction. The railroad had sheared the northern portion of Mound A and Highway 66 had sheared the southern side of Mound A and disturbed the much smaller mound B.

Initially, there was some skepticism that Mound A was a man-made construction. This is the area where the Tunica Hills meet the floodplain of the Mississippi River and many promontories in the area are natural formations so that it appeared to Jones and Shuman that Mound A may have been such a feature. However, when the vegetation was cleared for mapping purposes, seven plain sherds were exposed *in situ*, several feet below the mound's summit. Likewise, a plain sherd was found in the northern face of Mound B several inches below the mound's current summit. Jones and Shuman concluded, that while it is possible that the builders of these mounds may have supplemented a natural prominence in the case of Mound A, there can be little doubt that at least a portion, if not all, of the

mounds at 16WF1 were man-made constructions. If Mound A was in fact completely man-made, it was a structure of some size measuring more than 18 ft from base to summit and 135 ft along its surviving basal dimension (Jones and Shuman 1986).

Jones and Shuman also investigated two other mound sites in West Feliciana Parish somewhat further away, but still within the general vicinity of the project area. The Solitude Mound (16WF27) was found to be a platform mound sitting on a terrace overlooking the floodplain of Bayou Sara about five miles due east of Tunica Island. The data from this site pointed to a Plaquemine occupation of the region. The Noland Mound (16WF7) also sits on a terrace overlooking the Bayou Sara upstream and across from the Solitude Mound. This mound is a well preserved conical mound and suggests a Marksville period presence in the vicinity of the project area (Jones and Shuman 1986).

In 1987, Jones and Shuman, working on the west bank of the Mississippi River, investigated and reported upon two mound sites that are also in the general region of the project area: Monk's Mound (16PC5) and Lettsworth Bayou Mound (16PC7). 16PC7 had been previously investigated by C.B. Moore as noted above, but this fact had not been incorporated into the site files at the Louisiana Division of Archaeology. Jones and Shuman found the mound's dimensions to be 9.8 ft high with basal dimensions of approximately 130 x 120 ft and concluded that the mound was a pyramidal platform structure which agreed with Moore's assessment that the mound was "domiciliary." These measurements compare relatively well with C.B. Moore's, although the basal dimensions are somewhat larger. Besides possibly different criteria for defining a mound's base, it is also very possible that further slumping and erosion of the mound between Moore's measurements and those of Jones and Shuman created the differences (Jones and Shuman 1987:157-158).

Jones and Shuman also noted that the mound is on the natural levee of Bayou Lettsworth, a stream that was apparently once a tributary of the Mississippi. Currently, however, there is no water in the bayou due to cultivation and alterations of natural drainages. In addition to the artifacts reported by Moore, a 1977 site report on file at the Division of Archaeology filled out by Neuman, Toth, and Byrd cited ceramic evidence of a "middle and late Coles Creek" component at the site (DOA site files). A surface collection during Jones and Shuman's investigation recovered ceramic artifacts that indicated an occupation from the Coles Creek period as well as possibly the later Plaquemine period. Lithics in the form of a chert core and flakes were also found on the mound's surface (Jones and Shuman 1987:229).

In *Early Marksville Phases in the Lower Mississippi Valley: A Study of Culture Contact Dynamics*, Alan Toth investigated several sites that defined and refined the data on the development of the Marksville culture. Reporting on Monk's Mound (16PC5), Toth described the site as "one of the best preserved conical mounds left in the state of Louisiana" (Toth 1988:206). Furthermore, of the 175 sherds that he surface collected in the fields around the site, Toth noted overwhelming ceramic evidence of early Marksville occupation

at the site. Also, he placed the site in the Smithfield Phase of the Early Marksville and noted that all of the sites he assigned to this phase are associated with natural levees on the west bank of the Mississippi River (Toth 1988:196).

Jones and Shuman also investigated Monk's Mound (16PC5) in 1987, and agreed with Toth that it is a well preserved mound that shows no signs of vandalism and has been saved from cultivation. It is located on the backside of the natural levee of the former course of the Mississippi River now known as Raccourci Old River. It measures approximately 15.1 ft in height and has a basal diameter of 130 ft. Jones and Shuman found two sherds during a surface collection at the site, one of which was a Marksville Incised type, further validating the assignment of the mound to that cultural period (Jones and Shuman 1987).

CULTURAL RESOURCES INVESTIGATIONS

In addition to the investigations, reports, and excavations carried out by archeologists with theoretical research aims and academic affiliations, archeological research has also been carried out near the project area by archeologists under contract to the private sector or to governmental agencies such as the New Orleans District of the Army Corps of Engineers.

Among these researchers were R.W. Neuman and Frank Servello who conducted a survey of archeological sites in the Atchafalaya Basin for the New Orleans District of the U.S. Army Corps of Engineers (Neuman and Servello 1976). They, too, reported on Monk's Mound (16PC-5) and assigned to it a Marksville cultural affiliation. Ceramics analysis was used to determine this affiliations, although the report does not specifically name the pottery types from each site that accounted for the designations.

New World Research Inc. under contract to EMANCO Inc. of Houston, Texas, conducted two cultural resources surveys in 1982 and 1983 along the proposed rights of way for pipelines near Raccourci Island in both Pointe Coupee and West Feliciana parishes for a distance of 14 mi (23 km.). The 1982 work reported on five new sites that all had historic components. 16PC41, 42, 43, and 44 were sites that are located between the levees of the Morganza Floodway and the southern bank of Raccourci Old River. 16PC40 is located just south of the northernmost levee of the Morganza Floodway (New World Research 1982). This area is approximately six miles south of the Hog Point portion of the current proposed revetment work.

All these sites, except 16PC40, consisted of historic artifact scatters and had been disturbed by recent agricultural activity. 16PC40, because of its relative lack of disturbance was further tested for subsurface cultural deposits and eligibility for nomination to the National Register of Historic Places. Test units and artifact analysis revealed that while this site dated from the late nineteenth and early twentieth century, no house site could be located and the sites did not meet the criteria for nomination to the National Register (Swanson 1982:50).

In 1983, New World Research conducted another survey for EMANCO, Inc. in the same region due to a realignment of the proposed oil pipeline. This realignment ran for 13.6 km. west of Louisiana Highway 1 and the Texas and Pacific Railroad tracks between Lettsworth Bayou and south of Raccourci Old River just north of the levee of the Morganza Floodway. Six more historic sites were reported as a result of this survey. These sites, 16PC45, 46, 47, 48, 49, 50, 51, 52 and 53, were all scatters of historic debris and were judged to be former house sites that had been destroyed to allow plowing and cultivation. 16PC50 was found to be a dump site containing modern debris. None of the sites were deemed eligible for nomination to the National Register (Thomas 1983). All of these sites are west and south of the current study area.

A cultural resources survey was conducted by the National Park Service in 1984 across the Mississippi River and upstream from the current project area. This survey also included areas where revetments have been recently built and are therefore excluded from the current project area. Although the width of the survey corridor paralleling the river is not mentioned in the report, the project extended from Carr Point to Hog Point on the west bank of the river. According to the report, drainages and cut banks were closely inspected as these areas provided the greatest visibility. No prehistoric or historic sites were encountered by the survey and little mention was made of geomorphology, culture history, or previous archeological investigation in the region around the survey area (Shafer and Rhodes 1984:23-25).

Several sites that are on the National Register of Historic Places are located in the region of the project area. All are along the Raccourci Old River, the former channel of the Mississippi. St. Stephens Episcopal Church and its attendant cemetery are located near the town of Innis. Founded in 1848, it continues to have an active congregation. Also built in 1848 was the Lakeside Plantation Home which is occupied to this day. Both St. Stephens and Lakeside were built by Mr. Charles Stewart who was one of the earliest settlers in this region. The bricks for St. Stephens', in fact, were made at Lakeside by Stewart's slave labor.

The Lacour Store in the present day community of Lacour was a plantation store that was built in 1870. It continued in operation until 1975 and was placed on the National Register in 1979. Apparently slated for reconstruction and preservation, the building is currently deteriorating rapidly. Also in the community of LaCour, the Old Hickory Plantation House was built in 1820 and is presently occupied. The house was originally built by the Zenon Ledoux family, but was eventually owned by Ovide Lacour who also built the store and for whom the community is named. Old Hickory was also place on the National Register in 1979.

In 1988, Coastal Environments, Inc., conducted investigations at four separate revetment areas located along the banks of various portions of the Mississippi River. One of these portions incorporated an area called Arrow Bend that is downstream and around

Iowa Point from the project area. The area was composed of point bar and natural levee deposits that formed the characteristic ridge and swale topography of these deposits along the Mississippi River. While several camp structures were encountered during this survey, none were deemed to be of cultural significance (Kelley 1988:35-39).

Also, in 1988, Louisiana State University, under contract to the New Orleans District of the Army Corps of Engineers, conducted a cultural resources investigation that included portions of the Mississippi River bank across and upstream from the current project area. One of the segments of this project area was the so-called Hog Point, the lower end of which was directly across from the mouths of Tunica and Pollocks bayous. Nothing of cultural significance was found in that portion of the project area, but two historic sites, 16PC23 and 16PC24, were found upstream in the Carr Revetment section of this project that dated from a late nineteenth to early twentieth century occupation (Jones et al. 1989).

CHAPTER VI

RESEARCH DESIGN AND METHODOLOGY

The purpose of the cultural resources study in the current project area was to locate historic and prehistoric sites and make an assessment of their eligibility for inclusion in the National Register of Historic Places. The survey was also an element in a larger study of impacts on cultural resources on the natural levee of the Mississippi River.

The study used three instruments of research. First, the project employed the direct historical method to predict the presence and absence of sites. This research involved the consultation of historic maps, aerial photographs, land ownership documents, archeology records, and other literature sources. The second instrument was the application of the principles of fluvial geomorphology and the historic record to determine the channel movements of the Mississippi River and the impact of those movements on cultural resources. The third and last method of investigation consisted of pedestrian survey, shovel testing, and deeper subsurface testing that involved soil probes and test units.

The use of the relevant literature about the project area was conducted with five goals in mind. The first was the relocation of all previously reported archeological sites or location of probable sites. Secondly, site disturbance and land use data were collected to explain site formation and/or destruction. The third goal of this review was to analyze the data sufficiently to be able to predict where sites might be located within the project reach. Fourth, once the physical characteristics and the potential inventory of cultural resources within the project reach had been determined, appropriate survey techniques were selected for the assessment of the eligibility of particular sites for the National Register. The fifth goal of the literature search was to provide the cultural and archeological context to judge the significance of all sites encountered.

The research was also directed at answering four questions specific to this project area:

- 1) Is there a likelihood of finding sites if previously built segments of revetment were repaired?
- 2) When was Tunica Island formed and has its use or location changed over time ?
- 3) Will there be any impact on previously known sites in the reach area of the project such as the Brandon Site and Como Landing ?
- 4) Where were recorded historic Pascagoula and Tunica Indian sites in relation to the project area?

The intensive survey of portions of the project area consisted of several components. First, the bank lines of the project area were examined for artifacts that could have been washing out of the eroding banks. Secondly, a systematic regime of shovel tests and soil probes was employed within a corridor measured 200 ft from the current bankline. Shovel tests were placed in a grid within that corridor at approximately 20 m intervals. All shovel tests were approximately 30 cm x 30 cm horizontally and were excavated to a depth of 50 cm. All material recovered was screened using $\frac{1}{4}$ in mesh. Soil probes were used, frequently with extensions, to detect any sites buried under river deposits. Thirdly, areas of high probability for cultural resources were reconnoitered with greater intensity and shovel tested on a tighter grid (5m) in an effort to locate any archeological deposits.

Sites, when encountered, were defined by site mapping, shovel testing on a grid of smaller intervals, and soil probes. Controlled surface collections were performed where available and appropriate. Once defined horizontally, sites were tested for vertical stratigraphy and the presence of subsurface features. Artifacts recovered during any phase of the project were analyzed and catalogued following the standards of the Louisiana Division of Archaeology.

The final phase of the study consisted of data analysis and report preparation. Historic and prehistoric artifacts were evaluated for their indications of chronology and settlement patterns. From this analysis, as well as an assessment of the scientific and historical literature relevant to the project area, a determination of the eligibility of sites and structures within the project area was made. Also, an evaluation was made of the sites encountered and their contribution to the knowledge of prehistoric and historic settlement in the region.

CHAPTER VII

CULTURAL RESOURCES SURVEY AND SITE ASSESSMENT

The total project area for the Greenwood Bend and Iowa Point Revetments on the east bank of the Mississippi River extended from M-293.1 to 280-L. Within this reach, four tracts, two of them contiguous, were slated for intensive survey. These tracts ran from M-293.1 to 292.2-L; 292.2 to 290.2-L; 287.4 to 286.8-L; and 283.6 to 283.0-L (See Figure 1).

In conducting the survey, consideration was given to the results of all background research. The proximity of Como Plantation and Como Landing historic sites to portions of the project area suggested the possibility of encountering nineteenth century sites. Also, the notation of numerous Indian settlements on several historic maps suggested the possibility of eighteenth century aboriginal sites in parts of the project area. Furthermore, previous archeological investigations in the region, especially at the nearby Trudeau Site, hinted at the possibility of prehistoric and historic aboriginal sites within the project area. Additionally, the settings of some archeological sites in the region of the allowed the prediction of cultural resources at the mouths of small streams flowing into the Mississippi River. All of these data were weighed when conducting the survey for this project.

M-293.1 TO 292.2-L

Succinctly put, this uppermost tract in the project area incorporated the slopes of the Tunica Hills where the Mississippi River abutted their base (See Figure 1). The survey corridor was over very steep and highly dissected terrain. Much of the survey area was overgrown in underbrush and hardwood vegetation. The area incorporated historically known features such as Haldimand's Hill (See Figure 20), but the heavily dissected nature of much the terrain argued against the probability of any extensive human occupation in the area.

The banks of the river were shovel tested where possible. Often in this portion of the project area, however, the slopes of the Tunica Hills were so steep and unstable that testing was impossible. The surfaces of these areas were examined and no cultural material was detected in this portion of the project area. Some segments of this section included the summits within the Tunica Hills. When accessible, these summits were shovel tested. No cultural materials were recovered there either. A total of 85 shovel tests were dug in this portion of the project area. In the area approaching Pollocks Bayou, the project area was not as heavily dissected as other portions of this tract and the regular intervals of shovel testing were more practicable. Again, no cultural resources were observed.

Some historic maps from the British colonial period showed that Haldimand's Hill is in this portion of the project area. There are several promontories along the banks of the river here and any one of them could have been this landmark. It is unclear from the historic record if Frederick Haldimand, the listed owner of the property, ever lived on Haldimand's Hill. The summits of some of the Tunica Hills near the Mississippi were tested in an effort to detect any artifact associated with an eighteenth century home site and no such site was found.

Also, an attempt was made to relocate the Brakel Site (16WF26) that had been reported to the Louisiana Division of Archaeology in 1983. The site, although out of the survey corridor, was reportedly near the confluence of Pollocks Bayou and the Mississippi River (DOA site files). Brakel was cryptically described on the site form as a prehistoric and historic village site, but no artifact descriptions or other data accompany the report. Other notes on the site form suggest that it had been investigated by the Lower Mississippi Survey of Peabody Museum at Harvard University during the study of the nearby Trudeau Site and other sites of Tunica Indian occupation. No mention is made of the Brakel Site in Brain's *Tunica Archaeology* (1988), however, and the extent and content of the site was unknown. Efforts to relocate this site or detect any other cultural resources in this area were unsuccessful.

M-292.2 TO 290.2-L

The northern end of this area was demarcated by a small unnamed stream emptying into the Mississippi and the southern end by the pre-existing Greenwood Bend Revetment (See Figure 1). This segment of the project area included floodplain deposits that had been deposited by a former course of the Mississippi River at the base of the Tunica Hills. The upstream portion of the area, between the unnamed stream and Como Bayou, was a very level terrace that appeared to have been long cleared of vegetation except for a line of trees along the banks of Bayou Como. There were no indications, however, of recent agriculture in this area and it was overgrown in grass and weeds during the time of the survey. The remaining structures from the set of the film "Louisiana" are located at the northern end of this segment. Bankline erosion was so pronounced in this portion of the project area that some of the movie set appears to have been washed into the Mississippi River as a result of bank caving.

Also, a historic structure associated with the community of Como Landing and previously reported as part of a historic standing structure survey is located near this part of the project area. This building, a shotgun style house with cypress siding and a tin roof is set back approximately 500 ft from the bank of the river. The house is not occupied and the original structure appears to have been refurbished for the movie set (USACE 1984:370; Figure 26). Also, another historic structure, previously unreported, is located near the Como Landing house. This structure shown in Figure 27 is a church of the same cypress



Figure 26: Standing historic structure at Como Landing.



Figure 27: Standing historic church structure at Como Landing.

siding construction. This building is about 600 ft from the house. Both structures are abandoned and vegetation has grown up around them. However, both buildings have been renovated somewhat evidenced by plywood floors, recent electrical wiring, and styrofoam insulation and contained a great deal of stored construction material. It was learned that these buildings had been incorporated into the set of the movie "Louisiana" and that was the reason for the changes to the structures. Both the Como Landing House and the Como Landing Church are well outside the project area and will not be affected by the revetment construction.

The Como Plantation house is also located near this portion of the project area and set back from the river about 700-800 ft. The structure sits atop a small knoll at the base of the Tunica Hills that overlooks Como Bayou and is raised above the floodplain deposits that compose the terrace. This structure had also been recorded as part of the standing structure survey (USACE 1984:369) and its history discussed extensively in Chapter IV.

South of Como Bayou, to the existing revetment, the terrain is also a terrace, but somewhat less distinctive in some places when compared to the river banks near the Como Plantation. In other parts of this portion of the project area, however, the terrace slumping is significant. The area is mostly overgrown with hardwood vegetation and some secondary growth. Portions appear to have been once cleared, but have since grown back up.

The Como Landing Site (16WF29)

At the most upstream portion of this section, a scatter of prehistoric artifacts was discovered on the slopes of the eroding banks of the Mississippi River near the confluence of a small unnamed stream with the Mississippi River (Figure 28). This prehistoric ceramic sherd scatter was observed *in situ* in the profile of the eroding bank (Figure 29). The artifacts were distributed on the eroding area of point formed by the confluence of the small unnamed stream with the Mississippi. The stream drained a portion of the Tunica Hills and served to separate those hills on the north bank from level terrace composed of former floodplain deposits on the south. Also, a prehistoric sherd was recovered in a shovel test placed in the terrace summit during the survey, but it was recovered at the same level as a small sherd of window glass. This prehistoric site was reported to the Louisiana Division of Archaeology and designated as the Como Landing Site, 16WF29. The site's name was derived from the 15 minute USGS quadrangle that used that name for this spot on the river. The site should *not* be confused with the historic structures found at Como Landing or Como Plantation.

Diagnostic prehistoric artifacts recovered by surface collection off the eroded portions of the terrace included Pontchartrain Check Stamped, *var. Pontchartrain*; Plaquemine Brushed, *var. Plaquemine*; Mazique Incised, *var. Manchac* and *var. Kings Point* (Figure 30). Table 8 presents an analysis of the entire surface collection. The data recovered from the surface collection suggested a Late Coles Creek/ Plaquemine occupation at this site.

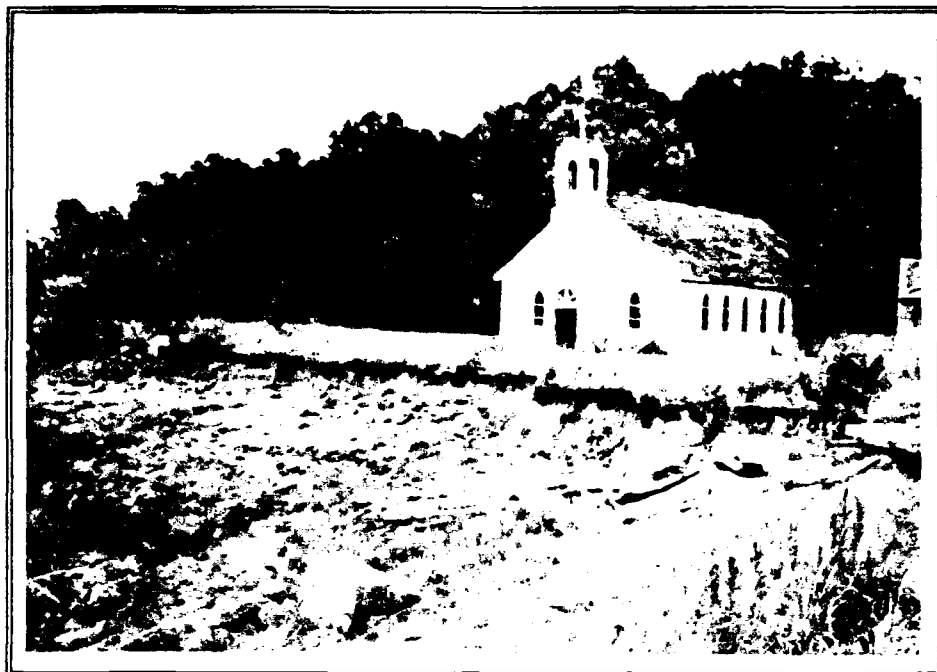


Figure 28

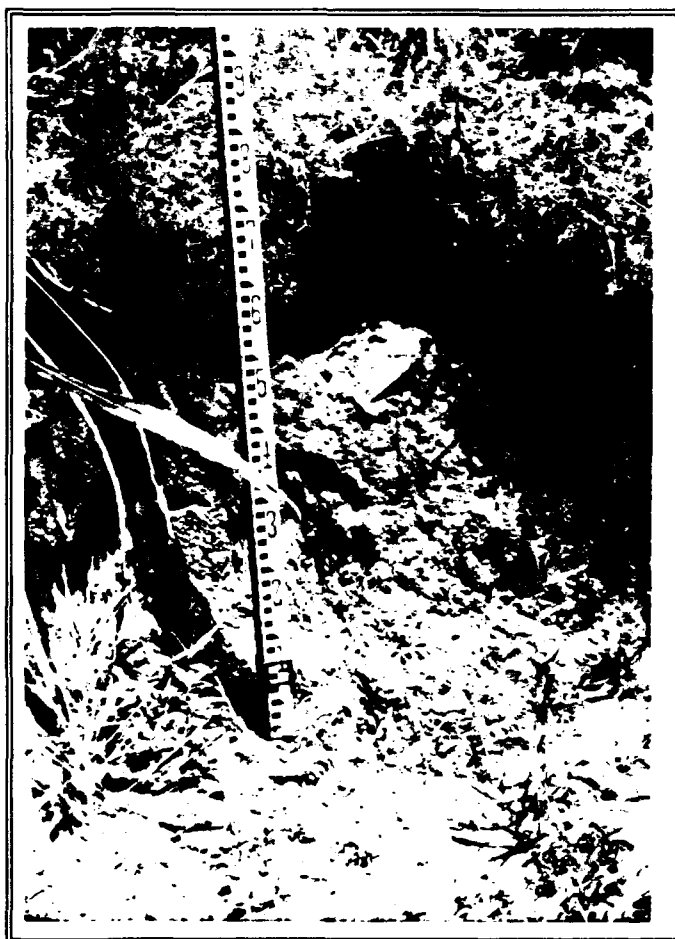
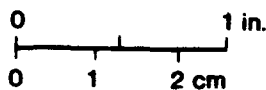
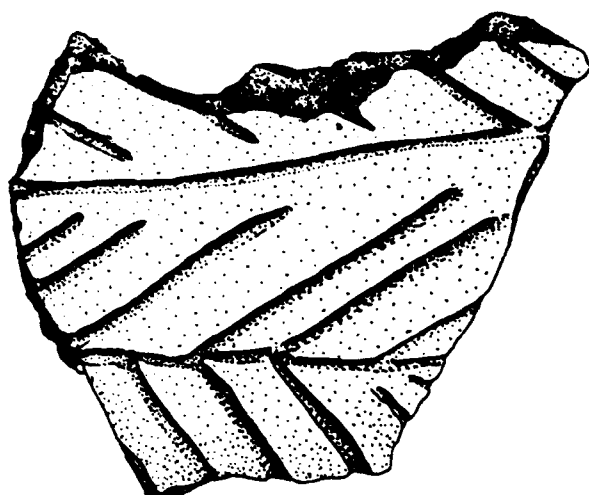


Figure 29

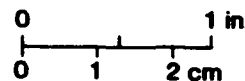
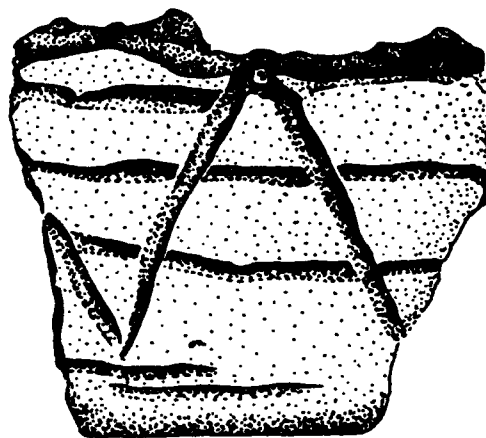
Figure 28: Setting of Como Landing Site (16WF29). Unnamed bayou runs to Mississippi River at base of tree line. Church building faces west.

Figure 29: *In Situ* prehistoric sherd in eroding bank of Mississippi River at Como Landing Site (16WF29).

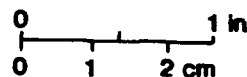
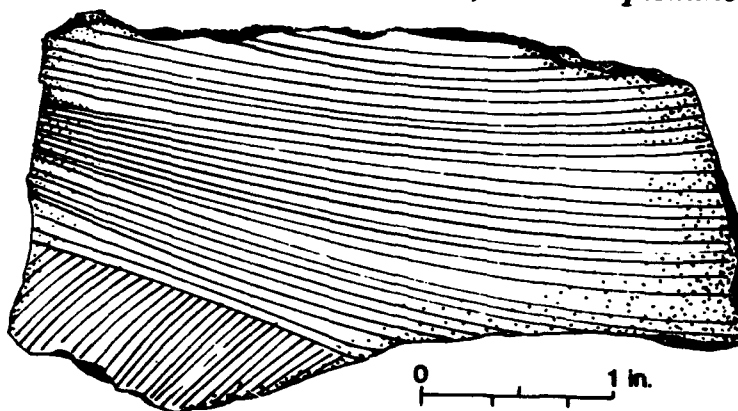


Mazique Incised, var. *Kingspoint*

Mazique Incised, var. *Manchac*



Plaquemine Brushed, var. *Plaquemine*



**Figure 30: Selected Artifacts from Surface Collection
Como Landing Site (16WF29)**

TABLE 8
ARTIFACT ANALYSIS
COMO LANDING SITE (16WF29)

ARTIFACT RECOVERED	TOTAL
SURFACE COLLECTION - MISSISSIPPI RIVER BANKS	
Ceramics	
Baytown Plain var. <i>Baytown</i>	27
Baytown Plain var. <i>Vicksburg</i>	(1)
Pontchartrain Check Stamped var. <i>Pontchartrain</i>	(1)
Plaquemine Brushed var. <i>Plaquemine</i>	(1)
Mazique Incised var. <i>Kings Point</i>	4
Mazique Incised var. <i>Manchac</i>	1
Incised & Punctated sherd-type var. <i>unspecified</i>	1
	(1)
Other Material	1
corroded metal ring	
basal sherd of whiteware	1
unidentified bone fragment	1
water smoothed cobble	1
	1
SURFACE COLLECTION - UNNAMED BAYOU BANKS	
Ceramics	
Baytown Plain var. <i>Baytown</i>	16
Baytown Plain var. <i>Vicksburg</i>	(1)
Coles Creek Incised var. <i>Coles Creek</i>	(1)
Plaquemine Brushed var. <i>Plaquemine</i>	(1)
Other Material	
primary lithic flakes (tan chert)	2

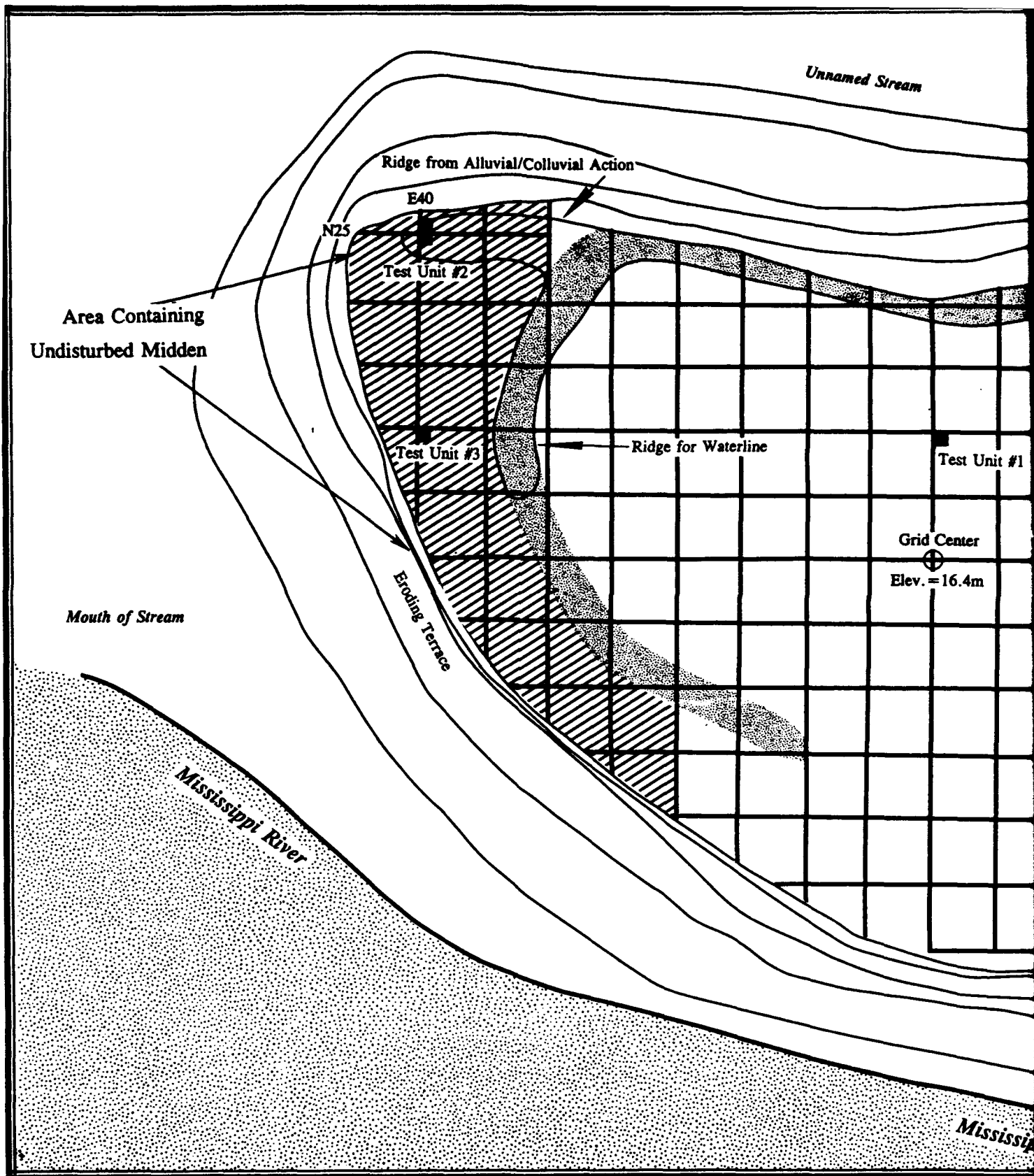
() Indicates Rim Sherd

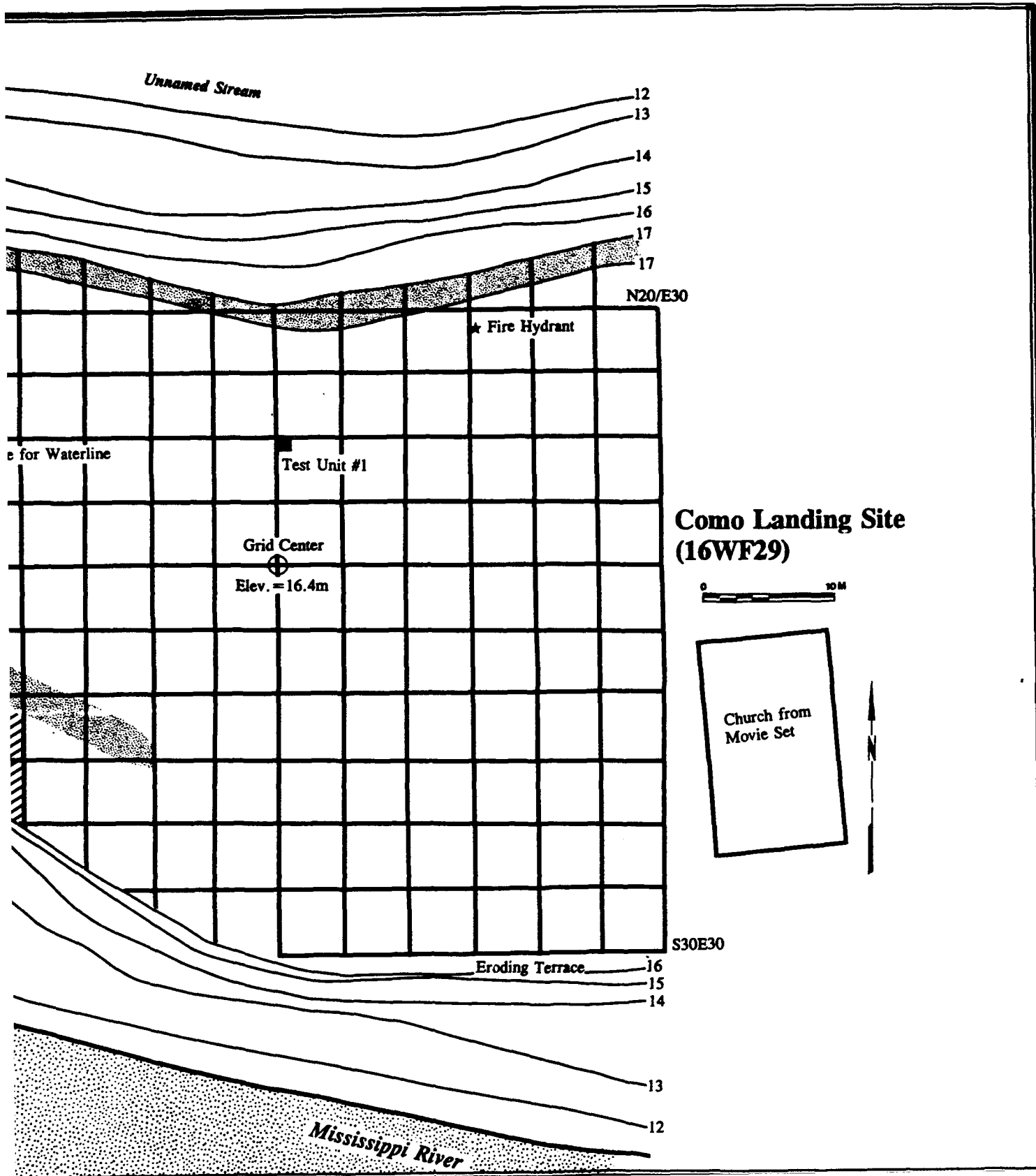
After discovering the site, archeological investigation of the Como Landing Site continued with site mapping (Figure 31). Using an elevation noted on the 7.5 minute USGS quadrangle near the Como Plantation house east of the site, an elevation line was run to the area of the site. An elevation of 16.4 m was assigned to the location that became the grid center of a grid with five meter intervals that served for the next level of investigation. As Figure 31 shows, the Como Landing Site consisted of the level summit of a terrace that overlooked the confluence of a small bayou with the Mississippi River. A curved ridge, about 50 cm high in some places, ran along the northern edge of the bayou and then curved southward toward the Mississippi River. This ridge was formed by the construction of a water and drainage line. A smaller ridge projected eastward off the curved ridge that appeared to have been the result of an alluvial/colluvial action rather than modern construction. The edge of the terrace facing the river was actively eroding, while the portion of the terrace facing the small creek was eroding less. The eastern most extent of the grid incorporated the portion of the eroding terrace where prehistoric artifacts had been found.

At each intersection of the grid that was laid out over the site, shovel tests were placed and occasional soil probes taken. None of the shovel tests, which had dimensions of about 30 cu cm., recovered any prehistoric or historic artifacts. Some of the shovel tests on the eastern edge of the grid recovered plate glass and aluminum nails that were associated with the construction of the movie set. As the movie set was not considered culturally significant, these materials associated with the set were also not deemed notable. The fill from the shovel tests and soil probes suggested that the area east and south of the curved ridge had been profoundly disturbed by the construction of the movie set and the water line. The area had been graded, packed, and filled with gravel in some spots. The portion of the site to the west of the raised curved area, however, appeared not to have been disturbed by the construction of the movie set. Soil probes and shovel tests in the area west of the water line consisted of coarse Mississippi River sand deposits or loessal alluvium. No artifacts or cultural deposits were recovered in any of the shovel tests or probes in this area.

Although none of the shovel tests detected any archeological deposits, two test units were placed in different parts of the site to better understand the area which contained the prehistoric artifacts on the eroding terrace. The results of one of these units led to the placement of an additional unit. All units were mapped in and located at the intersection of grid points that were laid out over the site. Data from these units are described below.

Test Unit #1 was positioned in the part of the site that contained the positive shovel test during the initial survey of the project area (See Figure 31). This one meter square unit was excavated in arbitrary 10 cm levels down to 60 cm below the surface. Figure 32 presents a profile of this unit. No artifacts or archeological features were detected in this unit. Rather, it was found that this portion of the site had indeed been profoundly disturbed by construction of the movie set. The matrix of a portion of the unit was densely packed clay soils that contained concentrations of gravel. This material was so hard to work, in fact, that a pick axe was necessary to excavate portions of it. Also, soil probes were placed



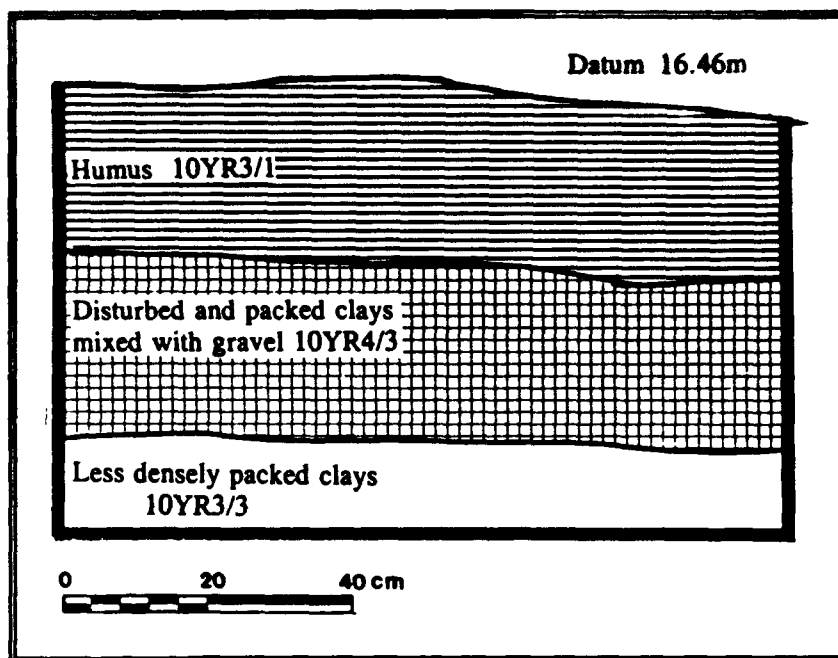


in the floor of the unit at the 60 cm level in an attempt to locate any intact organic midden material that may have been in association with the prehistoric site. These probes, taken to depths of at least 50 cm beneath the unit floor (110 cm below the surface) detected no such deposits.

Test Unit #2 was placed in a portion of the site where a concentration of prehistoric artifacts had been collected on the slopes of the terrace overlooking the

unnamed stream. The upper 30 cm of this unit recovered remains of a barbed wire fence as well as a few other historic artifacts. The fence probably once ran along the edge of the summit to keep cattle from falling down the steep banks of the stream. This material was all recovered in a matrix of loessal alluvium that was uniform and appeared to be the result of a single episode of flooding. No prehistoric artifacts were recovered in the upper levels of this unit. Soil probes into the floor of the unit, however, revealed a distinct strata of organic midden material at about 60 cm below the surface. It seemed plausible that this was the prehistoric midden that was the source of the prehistoric artifacts that had been collected on the eroding terrace of the site and the excavation of the unit continued.

A continuous organic midden was indeed located in Test Unit #2 and its horizontal dimensions were increased so that it measured 2 x 1 m with the longest dimension running north-south. The unit was excavated another 30 cm to 90 cm below the surface until culturally sterile soil was reached. The midden stratum was about 25 cm thick and very distinct from the alluvial material above it and the coarse river sands below. The midden also contained artifacts such as prehistoric ceramic sherds and lithic material. Table 9 presents an analysis of all the material recovered in Test Unit #2. Figures 33 and 34 are profiles from Test Unit #2.



**Figure 32: North Profile Test Unit #1
Como Landing Site (16WF29)**

TABLE 9
ARTIFACT ANALYSIS FROM TEST UNIT #2
COMO LANDING SITE (16WF29)

ARTIFACT RECOVERED	TOTAL
0-10 cm	
shovel handle	1
piece brown bottle glass	1
pieces of barbed wire fragments	17
wire fence brads	2
unidentified metal fragments	1
10-20 cm	
green bottle fragments	4
pieces of wood - probably fence post	2
metal fence brad fragments	6
barbed wire fence fragments	1
20-30 cm	
green glass basal fragments*	1
wooden fragments	3
metal fence post brads	3
30-60 cm	
no artifacts	
60-70 cm	
metal brad fence post	1
tertiary lithic flakes - 2 tan, 1 red chert	3
basal sherd	1
Baytown Plain var. <i>Baytown</i>	1
Baytown Plain var. <i>Addis</i>	1
chert cobble - possible hammerstone	1
70-80 cm	
Plaquemine Brushed var. <i>Plaquemine</i>	(1)
Baytown Plain var. <i>Baytown</i>	17
daub fragments	3
piece of gravel	1
80-90 cm	
primary flake - tan chert	1
Baytown Plain var. <i>Baytown</i>	41
Plaquemine Brushed var. <i>Plaquemine</i>	2

() Indicates Rim Sherd

* Dark green bottle base has a diameter of 6.35 cm. (2.5 in.). Molded into the base of the pickup a "K X". This mark is probably from the Kinghorn Plant, Unit Glass, Kinghorn, Fifeshire, Scotland from about 1920 to 1937.

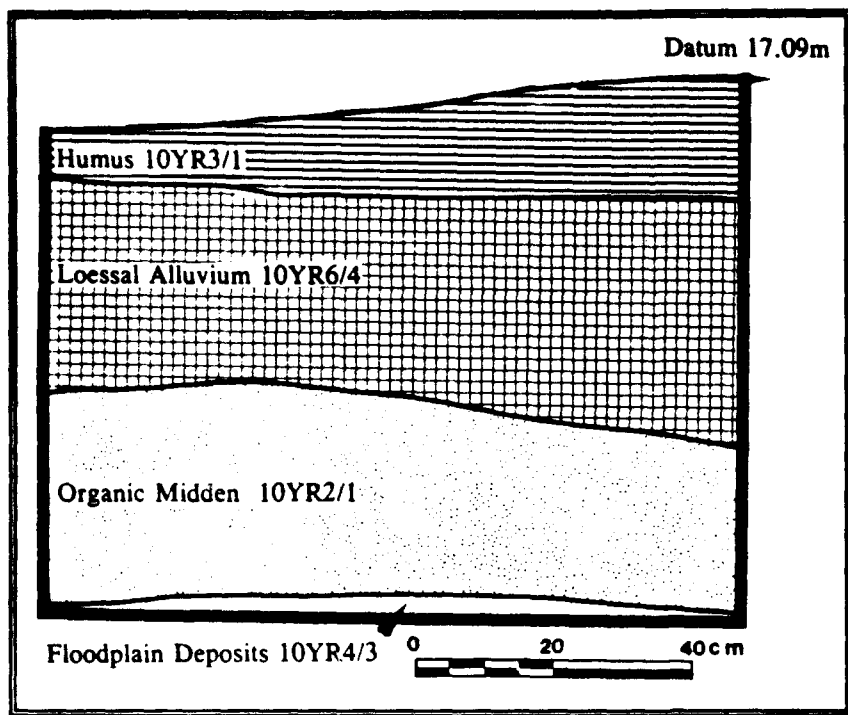


Figure 33: North Profile Test Unit #2, Como Landing Site (16WF29)

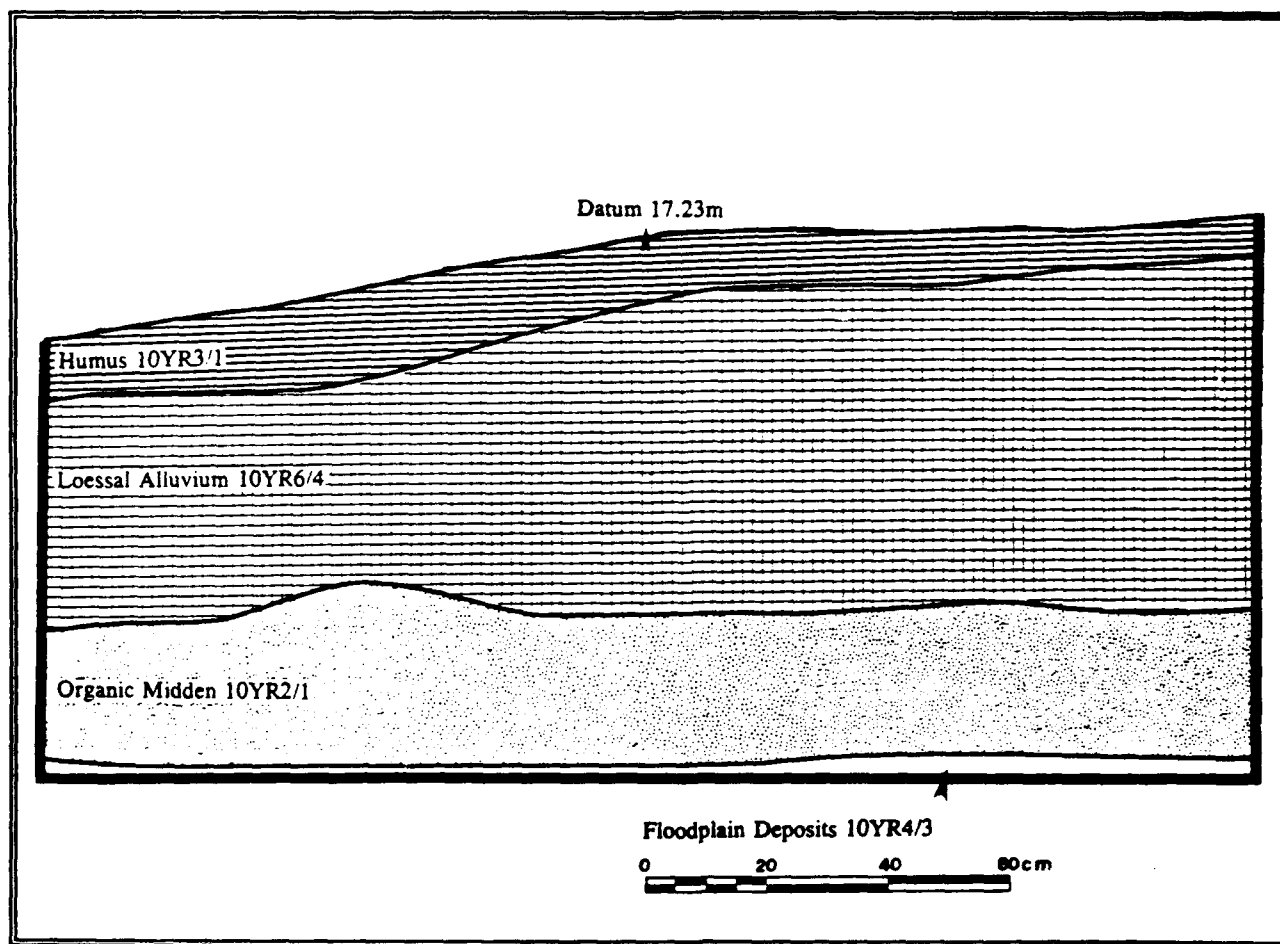


Figure 34: East Profile Test Unit #2, Como Landing Site (16WF29)

Because of the depth and nature of the archeological material found in Test Unit #2, soil probes were placed at the grid intersections and other portions of the area between the edge of the terrace and the narrow ridge that had been produced by the movie set construction. Many of the probes also revealed thick organic midden deposits at approximately the same depth as in Test Unit #2.

Test Unit #3 was placed in another portion of the site where it was presumed undisturbed archeological deposits would have been. At the time of the excavations of Test Unit #3, a concentration of artifacts was collected on the slopes of the eroding terrace just to the west of the test unit as the result of recent rains. With this added suggestion of prehistoric deposits, a meter square was placed in an undisturbed portion of the terrace summit (see Figure 31) and the unit was dug in arbitrary 10 cm levels. The presumption of an intact midden was vindicated when a distinct strata of organic midden material was encountered in the test unit at about 60 cm below the surface. No historic artifacts or features were detected in the matrix above this midden (Figure 35).

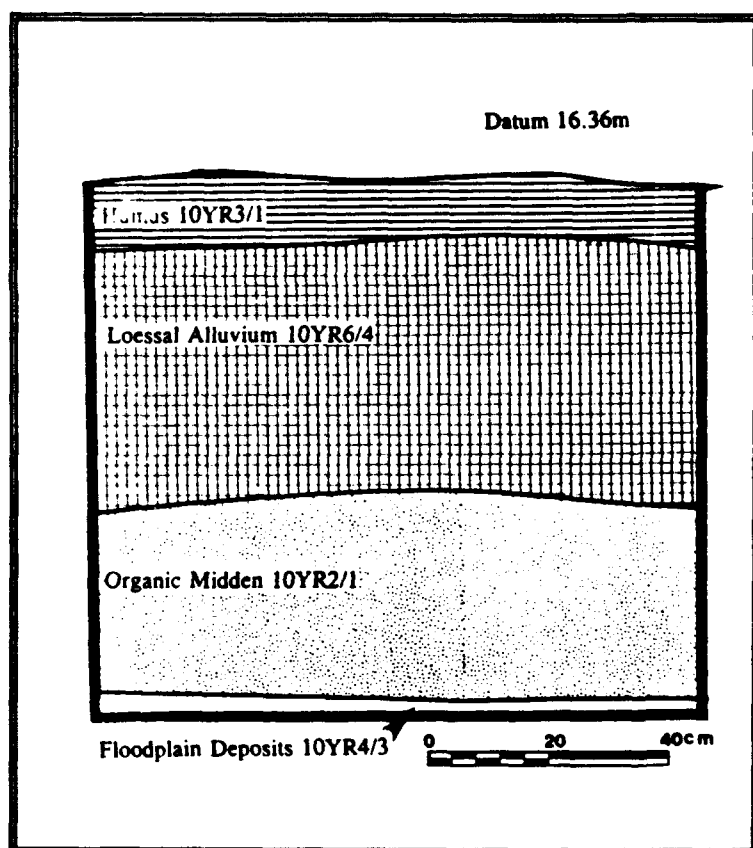


Figure 35: North Profile Test Unit #3 Como Landing Site (16WF29).

As was the case in Test Unit #3, it appears that the organic midden at the Como Landing Site was essentially sealed by a single episode of flooding, although subsequent flooding was quite possible. The stratum of midden was found to be about 20 cm in depth and the artifacts recovered (Table 10) indicate that this midden dates from the same occupation at the site as detected in Test Unit #2. No archeological features other than the midden were observed in this unit.

The movie set that had been constructed for the film "Louisiana" had impacted this portion of the project area. Not only were the buildings themselves only a few feet to the east of the site, but the area showed other signs of disturbance. The profile

presented by the eroding bankline of the Mississippi River revealed a distinct strata of gravel that appeared to have been laid for the purpose of the movie set construction. Also, the narrow ridge extended to the area of the movie set that appears to have been for the construction of a water line. A fire hydrant, which eventually became the benchmark for the site mapping, was located just northeast of the movie set structures.

TABLE 10
ARTIFACT ANALYSIS FROM TEST UNIT #3
COMO LANDING SITE (16WF29)

ARTIFACT RECOVERED	TOTAL
Bank Erosion Near Test Unit #3 - Day of Testing	
Baytown Plain Sherd	5
primary flake - tan chert	1
No artifacts until midden stratum encountered at 50 cm	
50-60 cm below surface	
Baytown Plain var. <i>Baytown</i>	6
60-70 cm	
Baytown Plain var. <i>Baytown</i>	1

Conclusions From Testing at Como Landing Site - Artifacts from both surface collections and test units indicate that a prehistoric aboriginal hamlet/village was located on the level terrace of the former floodplain deposits at the base of the Tunica Hills overlooking the confluence of the small stream with the Mississippi River. The original dimensions of this settlement are unknown. The archeological deposits that might have aided in providing the necessary measurements have been destroyed by erosion of the portion of the site facing the Mississippi River and by the construction of the movie set. The area that was gridded in five meter intervals measured approximately 3,200 sq m and was tested by 143 shovel tests and soil probes. As of the summer of 1991, when the investigations at the Como Landing Site took place, a crescent of land about 45 x 10 meters contained undisturbed archeological deposits. This small area was overlain by 60 cm of alluvium. The site's integrity, however, was only a fraction of what it had once been and because of this, the Como Landing Site is not deemed eligible for the National Register of Historic Places.

The site did provide some archeological data relative to the Lower Mississippi River Valley. It was determined that the Como Landing Site dated from the Late Coles Creek to Plaquemine period (ca. A.D. 1000-1500) and probably was part of the Truly phase of Coles Creek and the Delta-Natchezan phase of the Plaquemine culture (Phillips 1970: 919; 949). The site's location on a level terrace overlooking the confluence of a small stream with the Mississippi River, is reminiscent of the Riverside Midden Site (22WK543) that is located about 10 mi north of the Como Landing Site (Jones et al. 1989). It is even possible that the two sites were contemporary. The Como Landing and Riverside Midden Sites are indications of prehistoric occupations on the banks of the Mississippi River that are now relatively rare due to the changes of the river itself and the changes wrought by historic construction processes.

Also, as previously noted above, the 1778 Gauld map shows a Pascagoula Indian village in a portion of the river that could have possibly been at the location of the Como Landing Site. By the late 1700s, when the Pascagoula were located on the banks of the Mississippi, they would have been in contact with the French and other Europeans for almost 80 years, dating back to 1699 and Iberville's initial voyage of exploration. It is most likely that they would have obtained some goods of European manufacture like their Indian neighbors to the north, the Tunica. There were no such artifacts recovered from the Como Landing Site to suggest an eighteenth century presence by either Europeans or Indians. The Pascagoula village, if it existed in this portion of the project area, has probably already been carried away by the extensive bank erosion along this portion of the Mississippi.

Location of Historic Materials on Como Bayou

The confluence of Como Bayou with the Mississippi River was deemed a high probability area for cultural resources because of the predictive models operative for this portion of the Mississippi River. Also the location of the nearby prehistoric Como Landing Site and the historic structures associated with Como Landing and the Como Plantation suggest the possibility of cultural resources. Although the area had been cleared of vegetation, it was fallow during the survey and appeared to have long been fallow. Erosion of the Mississippi River banks were very evident during the survey and as discussed in Chapter II, this erosion has been significant over the last 100 years or more.

Initially, the northern bank of the confluence was surveyed by pedestrian reconnaissance and shovel tests at the prescribed interval. The northern bank of the confluence was gridded in five meter intervals over an area of 50 x 50 meters. Shovel tests and soil probes were placed at the point of each grid intersection. No cultural remains were detected.

The southern bank of Como Bayou was also surveyed by pedestrian reconnaissance. In this case, several historic artifacts, and a single prehistoric ceramic sherd, were recovered on the slope of the eroding terrace, near the edge. The artifacts were spread over a 20 or 30

meter area about 300 ft south of Como Bayou. The material collected consisted of historic and prehistoric materials. Table 11 presents an analysis of those artifacts. All of these artifacts were recovered on the slopes of the eroding terrace and were not associated with any other noticeable feature that would indicate a site.

TABLE 11
ARTIFACTS FROM ERODING MISSISSIPPI RIVER BANK
CA. 300 FT SOUTH OF COMO BAYOU

ARTIFACTS	NUMBER AND DESCRIPTION
Ceramics	<ul style="list-style-type: none"> 1 Creamware sherd 1 Pearlware sherd 1 Blue spongeware sherd 2 White ironstone sherds. One with indeterminate makers marks. 1 Prehistoric sherd Baytown Plain var. Baytown
Glass	<ul style="list-style-type: none"> 1 Piece of light green bottle glass
Nails	<ul style="list-style-type: none"> 1 Wire nail (ca. 18 d) 1 Square head nail (length 7 cm)
Bricks	<ul style="list-style-type: none"> 1 Fragment of brick with some mortar attached

Nevertheless, it was decided that this relative concentration of artifacts may be part of a site undetected on the terrace summit. Consequently, a grid with five meter intervals was established over an area of the terrace directly above where these artifacts were found. This test area extended from the southern bank of Bayou Como for 100 m until it was past the area where the artifacts had been recovered. Shovel tests and soil probes were placed at each grid interval with the intention of recovering more artifacts or locating historic or prehistoric archeological features. No such artifacts or features were detected during this procedure. It was determined that the artifacts recovered on the slopes of the river bank had either been deposited by the river or a site that had been all but destroyed. The provenience of these artifacts was so dubious, therefore, that a site report was not made for this portion of the project area.

Also, the banks of Como Bayou were surveyed beyond the 200 ft corridor of the project area and beyond. In fact, the bayou banks were surveyed for a distance of about 1000 ft from the mouth of the stream in an effort to locate any prehistoric or historic sites in the vicinity of the project area. About 400 ft upstream from the present mouth of Bayou Como, a small scatter of cultural material was recovered. The historic material consisted of whiteware, bottle glass, and ornamental glass. Also, two small prehistoric sherds were found in the vicinity of the historic material. The historic material dates to the mid-twentieth

century, and does not appear to be associated in any way with the prehistoric material. Rather, all these artifacts appear to be the result of incidental dumping into the bayou, rather than an indication of *in situ* occupation. Table 12 presents an analysis of the artifacts recovered here.

TABLE 12
ARTIFACTS FROM TRASH DUMP, SOUTH BANK OF COMO BAYOU,
CA. 400 FEET FROM MISSISSIPPI RIVER

ARTIFACTS	NUMBER AND DESCRIPTION
Ceramics	<p>1 Stoneware sherd with interior and exterior color glaze</p> <p>9 Ironstone sherds.*</p> <p>1 Hand painted ironstone plate sherd with grey, light green, yellow and blue floral pattern.**</p>
Glass	<p>1 Royal Crown Cola bottle fragment</p> <p>1 Piece of amber glass</p> <p>1 Thick (8 mm) piece of flat, clear glass. It was probably from a pressed or molded glass container.</p> <p>2 Prehistoric sherds. Baytown Plain var. <i>Baytown</i></p>

Comments: This material can probably be attributed to a recent deposit, perhaps the last 20 years.

* One had {Ger}MAN{Y?} in black lettering on the base.

** Manufacturer's mark stated:

OVENPROOF
DINNERWARE
Hand Painted
Underglaze
{Made} in USA

Other portions of Bayou Como contained what were obviously very recent trash dumps. Household appliances, discarded building materials, and plastic trash bags were observed in several portions of the bayou. This material appeared to have been deposited on the bayou banks within the past 20 years. This was especially true near where a small wooden bridge crossed the bayou. It would appear that Bayou Como served as a trash dump for occupations that dated from a prehistoric occupation of the area to a time in the very recent past.

Figure 36 presents the locations of cultural resources in the vicinity of the reach of the project area between Mile 292.2 to 290.2-L. Only the prehistoric Como Landing Site and portions of the movie set were to be impacted by the revetment construction. These sites as well as the Brandon Site, Como Plantation, and Como Landing historic structures attest to the attractiveness of the setting during both historic and prehistoric times.

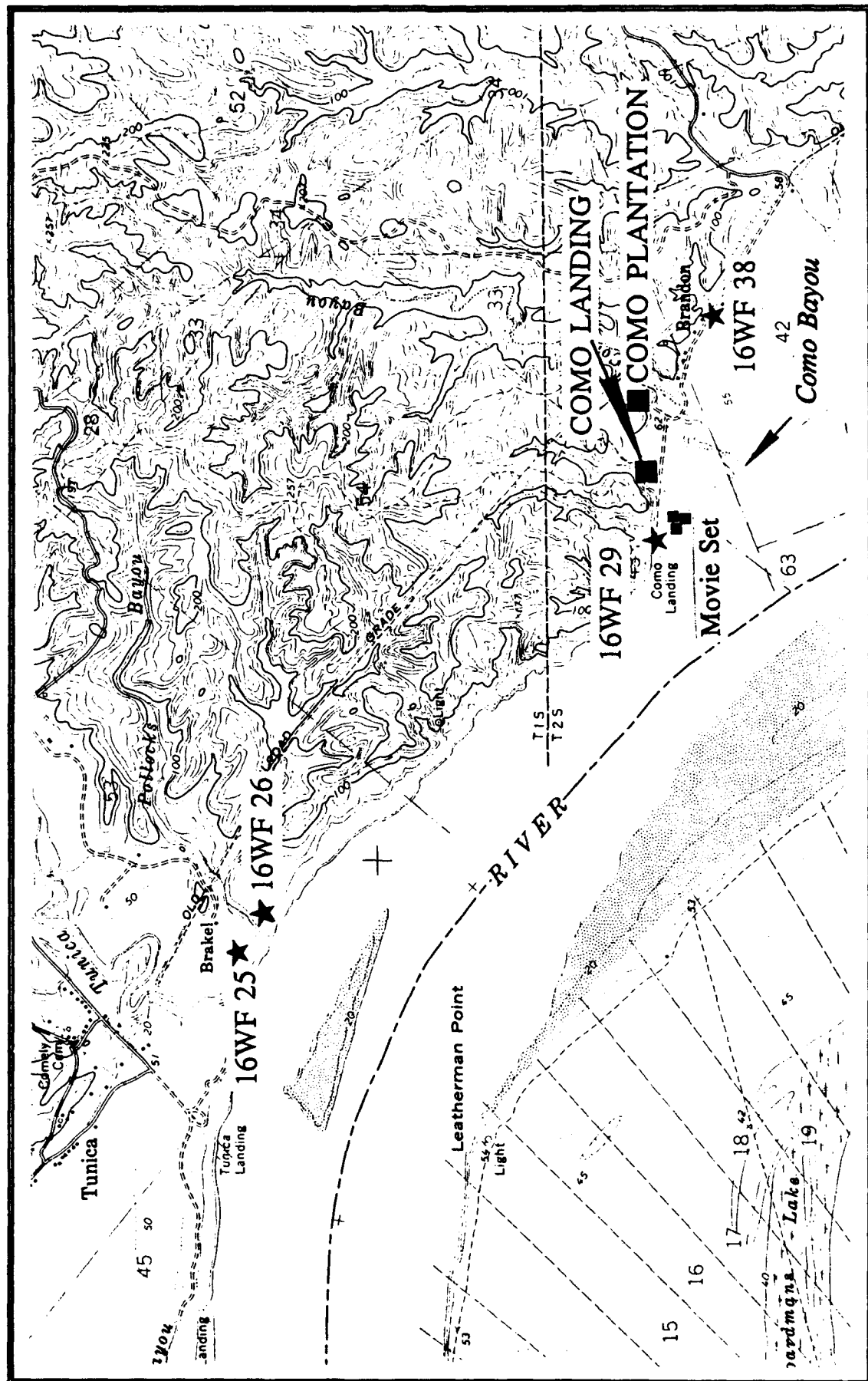


Figure 36: Location of prehistoric and historic sites in vicinity of Como Landing.

A total of 402 shovel tests were dug in this portion of the project area. This total includes the 143 shovel tests that were placed on the grid at the Como Landing Site (16WF29).

M-287.4 TO 286.8-L

This portion of the project area included the western bank of the Mississippi River on a portion of what was once Tunica Island (See Figure 1). The upstream piece of this portion abutted the southern end of the existing Greenwood Bend Revetment and extended downstream to a portion of the former island where sand bar aggradation has been extensive. As far as could be determined, the bank line in this portion of the project area had seen very little change despite the fact that the eastern channel around Tunica Island has silted in and it was no longer an island. Also, known on some early maps as Round Island, Tunica Island was apparently named for the nearby presence of the Tunica Indians during the eighteenth century, rather than an actual occupation.

No previous archeological sites had been reported in this portion of the project area or the immediate vicinity. The results of the shovel testing and pedestrian reconnaissance of this area was also negative. A camp structure is located north of this portion of the project area near the already existing Greenwood Bend Revetment, but it is well out of the project area and of such recent construction that it cannot be deemed culturally significant. A total of 110 shovel tests were placed in this portion of the project area.

M-283.6 TO 283.0-L

This portion of the project area extended downstream from the mouth of Blind Bayou, the former eastern channel of the Mississippi River around Tunica Island to the upstream end of the existing Iowa Point Revetment (See Figure 1). This portion of the project area has witnessed considerable bankline erosion and as well as redeposition in some places. The area is currently overgrown by some hardwoods, but mostly willows and secondary growth. The upstream end of this section contains distinctive ridge and swale topography which suggests that the Mississippi River has recently worked this area during periods of higher water. A total of 122 shovel tests were placed in this portion of the project area.

No culturally significant sites were found in this portion of the project area. However, a graded dirt track near the caving banks of the Mississippi River, however, will probably be impacted by the planned revetment construction.

As noted above, some historic eighteenth century maps of the Mississippi River dating from the late 1700s show a Tunica Indian village on a portion of Iowa Point that appears to be just downstream from the project area. The exact location of that village in

relation to present topography on Iowa Point is difficult to determine. The point has undergone significant changes with the alterations of the course of the Mississippi River. The so-called Tunica Swamp located inland from the banks of Iowa Point shows the pronounced ridge and swale topography produced by river channel action. Also, it is possible that the construction of the existing Iowa Point Revetment, built before the necessity of a cultural resources survey, may have destroyed or altered this site.

SUMMARY OF SURVEY AND TESTING

All four sections of the project area requiring pedestrian survey and shovel testing were investigated using the methodology outlined in Chapter VI. A total of 719 shovel tests were dug in the entire project area. Special attention was paid to the probability of cultural resources gleaned from archival research; analyses of aerial photographs; and observations of topography in the project area. The survey resulted in the locating and testing of a previously unreported prehistoric site, Como Landing (16WF29); the location of historic materials; the relocation of nearby historic structures outside the project area; and the assessment of the remnants of a movie set built in the early 1980s.

The Como Landing Site was found to be the remnant a prehistoric hamlet/village that dated from the Late Coles Creek/Plaquemine Period according to the artifacts recovered. Both disturbed and undisturbed portions of the site were investigated by test units, however. The site was impacted by erosion of the Mississippi River bank and the construction of the movie set for the film "Louisiana." Because of this impact, the site was found to lack the integrity necessary to nominate it to the National Register of Historic Places. Nevertheless, the discovery and testing of the site provides interesting data about prehistoric aboriginal settlement on the banks of the Mississippi River to be compared with other known sites in the region.

CHAPTER VIII

CONCLUSIONS AND RECOMMENDATIONS

The archival research concerning the Greenwood Bend and Iowa Point revetment area suggested the possibility of encountering both prehistoric and historic cultural resources in the project area. Predictive models of human occupation for prehistoric sites at the confluence of small streams with the Mississippi River also hinted at the possibility of cultural resources within portions of the project area.

More specifically, the archival study indicated the presence of historic Indian settlements by the Tunica and Pascagoula Indians in the area during the eighteenth century, as well as a possible European occupation during the British colonial period. No archeological site that could be attributed to either of those settlement types was detected in the survey area. Historic maps from the eighteenth century point to a "Tonica" Indian Village on Iowa Point in the vicinity of river Mile 282-283. Although the Mississippi River has changed its course significantly in this segment, it is possible that if the revetment was ever reworked, cultural deposits from the Tunica occupation could be exposed.

During the nineteenth century, portions of antebellum plantations occupied much of the project area. Most of this occupation consisted of cultivated fields. The only residential occupation in the vicinity during this period occurred at Como Plantation or the Brandon community, as it is also known. This area was inhabited by plantation owners and slaves or workers from the early nineteenth century well into the twentieth century. Two historic structures associated with the landing at Como Plantation are present in the vicinity of the project area. As noted above, one structure was reported in a survey of historic structures on the Mississippi River. It is a cypress-sided shotgun design residence that is now abandoned. It was renovated to some extent and included in the set for the film "Louisiana." Less than 100 ft east of the Como Landing house is a church building that had not been previously reported. This church structure is only slightly larger than the house and is constructed of similar cypress siding construction. The interior of this building has been modified considerably and it also appears to have been in the set for the film "Louisiana." Neither structure shows any sign of recent occupation and both are well outside the impact area for the revetment project.

Remnants of the movie set for the film "Louisiana" are located on the level terrace overlooking the Mississippi River near the confluence of a small unnamed stream draining the Tunica Hills into the Mississippi River. This is within the project area. The set was built and the movie filmed at this and other locations in West Feliciana Parish in 1983. Bank erosion appears to have caused some of the buildings for the set to have collapsed into the Mississippi River some time in the recent past. At the time of the survey, an imposing church structure, an ersatz bank, a barn, a blacksmith's shop, and a house were all the

buildings that were left. Two large pilings that appeared to have been set at the bank's edge for moorings for river boats were loosened and close to washing away because of bank erosion. These buildings were adequate for the temporary needs of filming, but the construction material and techniques used have meant that these structures are deteriorating rapidly. This movie set can expect to be impacted by revetment construction, but the age and significance of the site is such that it can not be recommended for inclusion on the National Register of Historic Places.

The Como Plantation house, as reported above, dates to 1890, and is a structure of some size and aesthetic appeal. This building seems to be currently unoccupied, but appears to be well maintained and shows no obvious signs of vandalism or decay. The Como Plantation house is also well out of the project area and will not be impacted by revetment construction.

The Brandon Site (16WF38) has been reported as the remains of a tenant home associated with the Brandon community. Topographic maps from earlier in the twentieth century show at least four structures in the area. None of these structures survive today. The only perceptible remain of any of them is a single brick chimney with hearths on two sides. This is presumably the Brandon Site. It is well out of the project area and will not be impacted by the planned revetment construction. An additional archaeological site, the Brakel Site (16WF26), although out of the project area, could not be relocated.

The area where Como Bayou flows into the Mississippi River was regarded as a high probability area for cultural resources. Materials consisting of historic and prehistoric artifacts were found in the project area on the eroding banks of the Mississippi River near the mouth of Como Bayou. These artifacts consisted of a few historic ceramic sherds, glass, and nails, as well as a single prehistoric sherd. None of this material found on the slope of the eroding bank of the river was *in situ*. Shovel tests and soil probes on the terrace over this portion of the bank recovered no artifacts or other cultural deposits. It was concluded that these artifacts had been placed by actions of the river and their provenience is impossible to determine.

Other artifacts, both historic and prehistoric, were found on the banks of Bayou Como itself well out of the project area. The historic material was part of a trash dump and its presence is to be expected in this area so near Como Plantation. The provenience of the prehistoric material found in the stream bed of Lake Como was impossible to determine, but it suggests a prehistoric presence in this part of West Feliciana Parish that is expected given the number of historic and prehistoric aboriginal sites in the area.

The only other portion of the project area containing extant historic structures is in the vicinity of Tunica Island. The Jerusalem Church has been marked on some maps in the region of Tunica Island, but it is well out of the project area. Modern occupation on and

around Tunica Island consists of cultivated fields and hunting camps. None of the current structures in this area will be impacted by revetment construction.

One previously unreported archeological site, The Como Landing Site (16WF29), was discovered during the intensive survey within the project area. It is located on the level portion of the same terrace where the historic Como Landing house and church, as well as the movie set are located. In fact, the construction of the movie set appears to have profoundly disturbed most of the archeology site. The portion of the site that remains undisturbed is at the edge of the terrace overlooking the confluence of an unnamed bayou with the Mississippi River. This location is somewhat predictable given the similar settings for other prehistoric and historic Indian sites in the region (e.g. Riverside Midden [22WK543]; Trudeau Landing [16WF25]).

The Como Landing Site was located by prehistoric lithic and ceramic artifacts washing out of the eroding Mississippi River banks. The terrace above this area of artifacts was tested for *in situ* archeological deposits. Soil probes eventually located an undisturbed midden consisting of organic material and prehistoric artifacts in a narrow crescent area about 45 x 10 m. It is estimated that this area composes about 14% of the original site given the distribution of prehistoric sherds along the eroding bank of the Mississippi River. Two test units checked the nature of the midden and recovered more artifacts. All the artifacts recovered at the Como Landing Site indicated a prehistoric occupation during the Late Coles Creek to Plaquemine period. As such, it would have probably been part of the Truly phase of Coles Creek occupation and the Delta-Natchezan phase of the Plaquemine period. Because the site had been so disturbed by bank erosion and construction of the movie set, it was deemed that the Como Landing Site lacked sufficient site integrity to make it eligible for the National Register of Historic Places. It may be important, however, to note the site's existence and location in any discussions of prehistoric occupations in the Lower Mississippi Valley.

In addition to these findings, four specific questions concerning the cultural resources within the project area were considered during the study of the project area:

- 1) Is there a likelihood of finding sites if revetment segments already in place were repaired? The existing Greenwood Bend revetment does not appear to have impacted any documented historic or prehistoric sites. However, Polly Creek, which drains a portion of the Tunica Hills and enters the Mississippi River near Mile 290, may have been a setting similar to the Como Landing Site. If the revetment was ever repaired, the possibility exists that prehistoric, as well as historic materials may be encountered. The existing Iowa Point revetment incorporates a portion of the point that was recorded on several late eighteenth century maps as the site of a Tunica Indian village. Although the river's channel has changed significantly since that time, the possibility exists that some materials from that historic Indian occupation might be encountered

should repair work ever be done on the segment of the Iowa Point revetment around Mile 283.

2) When was Tunica Island formed? How has it been used? Has its location changed? Tunica Island was formed by migration of the Mississippi River channel eastward over its old stream bed. This migration is in the river's most recent meander belt that began approximately 3000 years ago. The river's channel probably broke through a ridge in the ridge and swale topography on this floodplain and scoured the swale left by the previous occupation. There is no documentation that Tunica Island was ever occupied during historic times by either the Tunica Indians themselves or by later occupations. There is no indication that the island was ever cleared for agriculture and no record of any structure on the island until a camp was built in the recent past. The location of the island appears not to have appreciably changed since the mapping of the Mississippi River was begun by the Mississippi River Commission in 1879. Although they have less detail, earlier maps also suggest that the island has shifted its position only slightly. That is not to say that Tunica Island has not been altered. The chute channel around the eastern side of the island was silted in by the next mapping of the river in 1921 and this channel became designated Blind Bayou. The northern portion of the former island was incorporated into the Greenwood Bend revetment, but portions of the island just below this revetment, which is within a segment of this project, do not appear to have been appreciably altered by changes in the river's course or modern construction.

3) Is there any project impact to the Brandon Site and Como Landing? The Brandon Site (16WF38) is well outside the project area. As noted above, the historic structures associated with Como Landing are well outside the impact area of revetment construction. The undisturbed portion of the prehistoric Como Landing Site (16WF29), however, will no longer exist because of revetment construction.

4) Where were the historic Pascagoula and Tunica villages within the project alignment? The Gauld Map of 1778 shows a Pascagoula village that would seem to have been located somewhere on the level terrace overlooking the Mississippi River near Como Plantation and Como Bayou. This portion of the river was within the project area between Miles 292.2 and 290.2-L. This section could have included the Como Landing Site, but this site produced no artifacts that might indicate anything other than a prehistoric aboriginal occupation. It is entirely possible that any artifactual evidence of the Pascagoula presence, which may have been relatively short termed anyway, was washed away due to the channel changes of the Mississippi River. The Tunica village shown on several historic maps has either been destroyed by

the changes of the Mississippi River or has been disturbed or destroyed by the construction of the existing revetment.

RECOMMENDATIONS

As was anticipated, both historic and prehistoric materials were located in certain portions of the project area. Only one of these locations was deemed worthy of being designated a site: the Como Landing Site (16WF29). Because this site is not eligible for the National Register, and data has been collected by a testing program of the small undisturbed portion of the site, further work is not recommended. Any planned revetment construction activity should be allowed to take place. No other prehistoric or historic materials were located in the remainder of the project area in significant enough number or context to warrant further study. However, because of the presence of Como Landing, Como Plantation, Como Bayou, and the Brandon Site, special note should be taken of these cultural resources if other construction plans are ever made that might impact this stretch of the Mississippi River.

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20 June 1991

SCOPE OF SERVICES
CONTRACT DACW29-90-D-0016
DELIVERY ORDER 02

CULTURAL RESOURCES SURVEY OF GREENWOOD BEND AND IOWA
POINT REVETMENTS, MISSISSIPPI RIVER M-293.1 TO 280-L

1. **Introduction.** This delivery order calls for a cultural resource investigation of the east bank of the Mississippi River between Miles 293.1 and 280.0-L in West Feliciana Parish, Louisiana (Enclosure 1, Hydrographic Survey 1983-1985, Charts 9, 11, 13-15). This project reach combines the construction rights of way of Greenwood Bend (Enclosure 2, File No. 1-172, Chart 8) and Iowa Point Revetments (Enclosure 3, H-13-28700). The work requires a literature search specific to the entire project reach (Miles 293.1 to 280.0-L), survey of approximately 4.1 miles within the reach, inventory and assessment of the significance of all sites and structures within survey areas, and preparation of comprehensive draft and final reports of investigation for the study. The contract period for this delivery order is 265 days.

2. **Project Context.** This delivery order is one element of a much larger study of impacts to cultural resources on the Mississippi River natural levee. The specialized nature of the survey environment heavily influences current data collection strategies. The bank edge of the natural levee is constantly reshaped by bank caving, highwater scour, point bar accretion, crevasses, hurricanes, public and private construction. The character of the bankline also varies with the specific channel reach.

In response to this environment, the most effective archeological method used to date integrates three key tools: the direct historical method for forecasting the presence or absence of sites (employing historic maps and detailed courthouse record search); application of historic maps and the principles of fluvial geomorphology to trace channel movement over time; and application of deep testing methods (augering and trench excavation) during the survey phase. The study has collected data on nineteenth century levee building, the sugar and rice industries, wharves and landings, boatyards, the distribution of both large and small landholders from the eighteenth century to the present, and impacts to sites. Project schedules control selection of survey reaches, which usually include multiple construction items and require consideration of future maintenance construction. The emphasis is upon comprehensive archeology in a reach rather than on simply clearing a specific project. Each new investigation not only adds to the growing data base of prehistoric and historic sites but also has the potential to refine future work through improved field methods and more specific background sources.

3. **Description of the Study Area.** The project reach is located on the east bank of the Mississippi River in West Feliciana Parish, below the community of Tunica. The reach is largely undeveloped and has never been leveed. The two new construction easements within the reach are extensions of earlier revetment segments (Table 1). The Gauld map (1778; Enclosure 4) indicates Pascagoula and Tunica settlements in the vicinity of Miles 293 and 282, respectively. The Brandon Site, 16WF38, is close to the project easement. The shipwreck database includes no historic wrecks in the project reach. The closest wrecks are the Bob Blanks (mile 297.6) and the Swan (mile 295.3) (Enclosure 5).

4. Description of the Construction Project. The Corps of Engineers proposes to extend the concrete mattress revetment already in place at both the Greenwood Bend and Iowa Point Revetments. Both reaches will be stabilized with a continuous articulated concrete mattress which is mechanically laid from the Low Water Reference Plane (LWRP) to a point several hundred feet into the river channel. To prepare for revetting, a 200 foot wide corridor adjacent to the bankline will be cleared of all vegetation and graded to a standard slope. Rock is piled from the top of the mattress to the top of the bank, protecting the bank slope from erosion.

Except where the bank rises sharply as an escarpment, slope grading will remove the upper bankline within a 100 foot wide corridor adjacent to the edge of bank. The grading distance will vary in areas where caving has occurred. Any cultural resource within 200 horizontal feet of the bankline and within 10 vertical feet of the ground surface has a high potential for being destroyed. Surficial resources further than 200 feet from the bankline may be subject to disturbance from the movement of heavy equipment, but buried sites will remain intact. Where the river cuts into the Pleistocene Terrace escarpment, the revetment will be laid from the LWRP without grading the upper bank.

5. Study Requirements. The work to be performed by the Contractor will be divided into three phases: Literature Search and Records Review; Intensive Survey and Site Assessment; and Data Analysis and Report Preparation.

a. Phase 1: Literature Search and Records Review. The Contractor shall commence, upon work item award, with a literature, map, and records review specific to the entire project reach (M-293.1 to 280.0-L). While some general information on a parish, state or national level may be required to explain cultural, economic and environmental trends active in the vicinity, this report will focus on the history of human use of the project reach up to the present time. The goals of this review are five-fold and all five are of equal importance. First, this review will identify all existing, former and probable sites within the reach. Second, this review will collect and interpret site formation and destruction data (settlement, landuse, and land disturbance data) in a balanced manner for all periods of occupation including the present. In particular, the Contractor must document what earlier revetment construction would have destroyed. Third, this review will be sufficiently complete and detailed to allow its application by any project in the vicinity to forecast all sites in the project reach, their history and state of preservation. Detailed background research should be collected for the entire reach; not just for known site locations. Fourth, the results of this review will guide the selection of survey techniques to accommodate both surficial and potentially buried sites. Fifth, this review will provide the background context by which the significance of all sites in the reach may be assessed.

At a minimum, the literature and records review will establish the distribution of prehistoric and historic sites in the region and their proximity to the study area; identify previously recorded sites, standing structures, National Register of Historic Places properties and National Landmarks in or in close proximity to the project reach; provide national, regional and local context for assessing the historical, architectural and archeological significance of all sites and structures located in the project reach; and predict resources which can be expected to be located within the project reach. Economic and social trends, channel migration, major natural events, and all previous construction affecting land use patterns and the state of preservation of predicted resources will be analyzed and presented in specific terms of the project reach.

This phase shall include but not be limited to review of historic maps (i.e., Mississippi River Commission charts, General Land Office maps, land plats, etc.), the State Archeologist's site, shipwreck and standing structure files, the National Register of Historic Places, geological and geomorphological data, archeological reports, ethnohistoric records, historic archives, census records, sugar and rice reports, and Land Office or courthouse records. Interpretation of landuse during any given period should not rely on maps alone, but should incorporate as many relevant sources as possible to prove or disprove an hypothesis. Where archival data can not be found, answers to research questions will be sought through interviews.

Specific questions to answer:

1. is there likelihood of finding sites if revetment segments already in place were repaired?
2. when was Tunica Island formed; how has it been used; has its location changed?
3. is there any project impact to the Brandon Site and Como Landing?
4. where were the historic Pascagoula and Tunica villages in relation to the project alignment?

b. Phase 2: Intensive Survey and Site Assessment. Survey and site assessment of the two 1991 construction items (Table 1: M-292.2 to 290.2-L and 283.6 to 283.0-L) must be completed by 10 Aug 1991. The Contractor will immediately inform the COR of all sites found in this item, and will coordinate the site assessment schedule with the COR.

An intensive survey is a comprehensive, systematic, and detailed physical examination of an easement for the purpose of locating and inventorying all cultural resources within the impact zone. The survey will be performed within the context of an explicit research design, formulated in recognition of field conditions and all prior investigations in the study area and surrounding region.

The survey shall be an intensive pedestrian investigation augmented by systematic subsurface testing. Maximum transect width will not exceed 20 meters. The survey methodology must take overburden into account. Bankline examination and shovel testing alone are not adequate to inventory all sites in this environment. The Contractor will include sample augering in the investigation methodology to 1) establish the probable depth of former living surfaces; 2) locate buried sites or cultural strata indicated by literature and map research; and 3) assess the size and significance of sites located in the bankline. The augering program will be designed to avoid backswamp soils and point bar deposits unless background research justifies the expenditure in order to answer a specific research problem.

All shovel tests, test pits and other holes will be backfilled and packed to avoid personal injury and property damage.

The areas surveyed and all sites located within project boundaries will be recorded (in ink) to scale on the appropriate 7.5 minute quadrangle and aerial mosaic project maps. The quadrangle maps will be used to illustrate site forms (see below).

Survey will include subsurface testing and evaluation of identified resources against the National Register of Historic Places criteria of significance (36 CFR 60.4). The survey will provide adequate information to seek determinations of eligibility from the Keeper of the National Register, and will innumerate project effects on each resource located within the study area. The evaluation will be conducted utilizing current professional standards and guidelines including, but not limited to :

the National Park Service's draft standards entitled, "How to Apply the National Register Criteria for Evaluation", dated June 1, 1982;

the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation as published in the Federal Register on September 29, 1983;

Louisiana's Comprehensive Archaeological Plan, dated October 1, 1983;

the Advisory Council on Historic Preservation's Section 106 Update/3 entitled, "Manual of Mitigation Measures (MOMM)", dated October 12, 1982.

All sites will be sufficiently tested using shovel, auger or other excavation techniques to determine and record site size, depth of deposit, stratigraphy, cultural association, function, approximate date of occupation, condition, and significance. Site boundaries, test excavation units at sites (including test pits, shovel tests, auger intervals, backhoe trenches, etc.) and activity areas will be measured and mapped to scale. All scaled field maps will accurately reference grid locations in terms of levee stations or range markers in close proximity to the work area. The actual elevation (NGVD) of all subsurface sites, the top of bank, and top and bottom of cultural strata will be determined and mapped.

The COR will be informed ahead of time of the testing schedule of all sites.

The Contractor will fill out and file state site forms with the Office of the Louisiana State Archeologist and cite the resulting state-assigned site numbers in all draft and final reports of this investigation. The Contractor will submit updated state site forms to the State Archeologist for all previously discovered sites within the project reach. These forms will correct previously filed information and summarize what is known of each resource as a result of this investigation. One unbound copy of each site or standing structure form will be submitted to the COR with the draft report.

All standing structures located in the survey area will be identified by function, dated and described using standard terminology of formal and/or vernacular architecture, as appropriate to each structure. Each standing structure will be recorded (using a simplified, standardized format selected by the Division of Archaeology and Historic Preservation), accompanied by a minimum of three, clear, black and white photographs showing front, back and side views of the structure. The Contractor will determine whether subsurface features are present. If present, the structure and all features shall be treated as a site, which shall be mapped and recorded on State of Louisiana site forms. The Contractor shall assess the significance of all standing structures using information collected during the survey and literature search phases of this work item.

One property (Township 2 South, Range 4 West, Section 41) is gated and requires contact with the landowner to arrange ingress (Enclosure 6). A copy of field notes specific to this property will be provided to the COR for forwarding to the landowner (See Section 5.b, Draft and Final Reports.)

c. Phase 3: Data Analyses and Report Preparation. All survey and testing data will be analyzed using currently acceptable scientific methods. The Contractor shall catalog all artifacts, samples, specimens, photographs, drawings, etc., utilizing the format currently employed by the Office of the Louisiana State Archeologist. The catalog system will include site and provenience designations.

All literature, map search, field and laboratory data will be integrated to produce a single, graphically illustrated, scientifically acceptable draft report discussing the project reach as a whole. Data integration requires use and application of all data collected to interpret resources, their setting, formation, destruction and significance.

6. Reports.

a. Monthly Progress Reports. One copy of a brief and concise statement of progress shall be submitted each month throughout the duration of the delivery order. These reports, which may be in letter form, should summarize all work performed, information gained, or problems encountered during the preceding month. A concise statement and graphic presentation of the Contractor's assessment of the monthly and cumulative percentage of total work completed by task shall be included each month. The monthly report should also note difficulties, if any, in meeting the contract schedule.

b. Draft and Final Reports (Phases 1, 2, and 3). Five copies of a draft report integrating all phases of this investigation will be submitted to the COR for review and comment 150 days after the date of the order. As stated in Section 5, b above, one copy each of all site and standing structure forms, 7.5 minute quadrangle maps marked with site locations, and survey notes relevant to Township 2 South, Range 4 West, Section 41 will be submitted separately with the draft report.

All data collected will be reported. The final report will fully describe how data were collected. All sites located within the reach will be related in text and tabular form to the appropriate construction item(s) for accurate future reference. The final report shall include maps of each site located or revisited during Phase 2. These maps shall illustrate locations of shovel tests, test units, auger holes, trenches, artifact distributions, activity areas and features. Each map will give the distance and direction from the site datum to a permanent bench mark.

An estimate of the acreage surveyed for this project will be cited in the report introduction.

Project impacts to every cultural resource located and/or tested by this study will be assessed. The draft and final reports shall include all data and documentation required by 36 CFR 60-63 to prepare requests for Determination of Eligibility to the National Register of Historic Places for those sites recommended by the Contractor as significant. The Contractor shall provide justification of the rationale used and a detailed explanation of why each resource does or does not meet the National Register significance criteria (36 CFR 60.4). For each resource recommended as eligible to the National Register and assessed to be impacted by construction, the Contractor shall recommend specific mitigation alternatives appropriate to the site or structure, its physical setting and condition. Discussion of mitigation will include an implementation plan recommending field and laboratory techniques, equipment to be used, sizes of samples and excavation units, description of any special procedures, etc. Inferential statements and conclusions will be supported by field, map or archival data. It will not be sufficient to make significance recommendations based solely upon assumed site condition, artifact content, or the presence or absence of features.

These written reports shall follow the format set forth in MIL-STD-847A with the following exceptions: 1) separate, soft, durable, wrap-around covers will be used instead of self covers; 2) page size shall be 8-1/2 x 11 inches with a 1-1/2-inch binding margin and 1-inch margins on all other edges; 3) the editorial policy and style guide of the Society for American Archaeology (1983) will be applied to the report text, citations and References Cited. Spelling shall be in accordance with the U.S. Government Printing Office Style Manual, dated January 1973.

The body of each report shall include the following: 1) introduction to the study and study area; 2) environmental setting; 3) review and evaluation of previous archeological investigations; 4) distribution of prehistoric and historic settlement in the study area; 5) research design; 6) description of field and laboratory methodology, statement of project objectives, and analysis of the effectiveness of the methods; 7) data analyses and cultural material inventories; 8) data interpretation; 9) integration of archeological and historical data; 11) conclusion; 12) data recovery recommendations for significant sites or structures; 13) references cited; and 14) appendices, as appropriate. The transcripts of all interviews will be provided in an appendix as will data and profiles from all borings and/or backhoe trench profiles collected during the field phase of this study.

The COR will provide all review comments to the Contractor within 45 days after receipt of the draft reports (195 days after the date of the order). Upon receipt of the review comments, the Contractor shall incorporate or resolve all comments with the approval of the COR and submit one copy of the final draft for final review within 225 days of the date of the order. Upon approval, the Contractor will submit one reproducible master copy and 40 bound copies of each report of investigation, and all separate appendices to the COR within 265 days after the date of the order.

In order to preclude vandalism, the draft and final reports shall not contain specific locations of archeological sites.

7. Disposal of Records and Artifacts. All records, photographs, artifacts, and other material data recovered under the terms of this delivery order shall be recorded and cataloged in a manner compatible with those systems utilized by the Louisiana SHPO and by State and Federal agencies which store archeological data. They shall be held and maintained by the Contractor until completion of the delivery order. Final disposition of the artifacts and records will be in accord with applicable Federal and State laws. Unless otherwise specified, artifacts will be returned to the landowner or permanently housed with the Louisiana Division of Archaeology and Historic Preservation or in a repository selected by the State Archeologist. The Principal Investigator shall inform the COR in writing when the transfer of data has been completed and shall forward to the COR a catalog of items entered into curation. The location of any notes, photographs or artifacts which are separated from the main collections will also be documented. Presently existing private archeological collections from the project area which are used in data analyses will remain in private ownership. The Contractor shall be responsible for delivery of the analyzed archeological materials to the individual landowners, the Louisiana SHPO's office, or any other repository designated by the Government following acceptance of the final report. All artifacts to be permanently curated will be cleaned, stabilized, labeled, cataloged on typed State curation forms, and placed in sturdy bags and boxes which are labeled with site, excavation unit or survey collection unit provenience.

8. Partial Payments. Partial payment will be made up to ninety percent (90 %) upon submission of proper invoices and acceptance of the draft report by the COR. The draft report will be accepted when the COR determines that it substantially meets all the requirements of the scope of service. The balance of the delivery order amount will be paid upon receipt of proper invoices and the Government's acceptance of all final products.

TABLE 1

REVETMENT ITEM	RIVER MILE	RANGES	HYDRO CHART	CNSTR FY	COMMENTS
Greenwood Bend	293.1-292.2-L	unassigned	9	1994	survey 200 ft wide corridor parallel & adjacent to LWRP*
	292.2-290.2-L	292.2 to U-55	9,11	1991	survey, same as above
	290.2-287.4-L	U-55 to D-0	11,13	1961 1962 1969	constructed; no survey required; assess in lit search
	287.4-286.8-L	unassigned	13	1995	survey, same as above
	286.8-283.6-L	unassigned	13, 15	N/A	Tunica Island; no construction planned; no survey required; assess in lit search
Iowa Point	283.6-283.0-L	U-80 to U-37	15	1991	survey, same as above
	283.0-280.8-L	U-37 to D-40	14	1956 1957 1958 1964 1967	constructed; no survey required; assess in lit search
	280.8-280.0-L	unassigned	14	1990	point bar accretion; no survey required; assess in lit search

*LWRP refers to Low Water Reference Plane, illustrated on Mississippi River Hydrographic Survey Charts 1983-1985